

United States Marine Corps
Concepts & Issues

97

***“Making Marines,
Winning Battles”***



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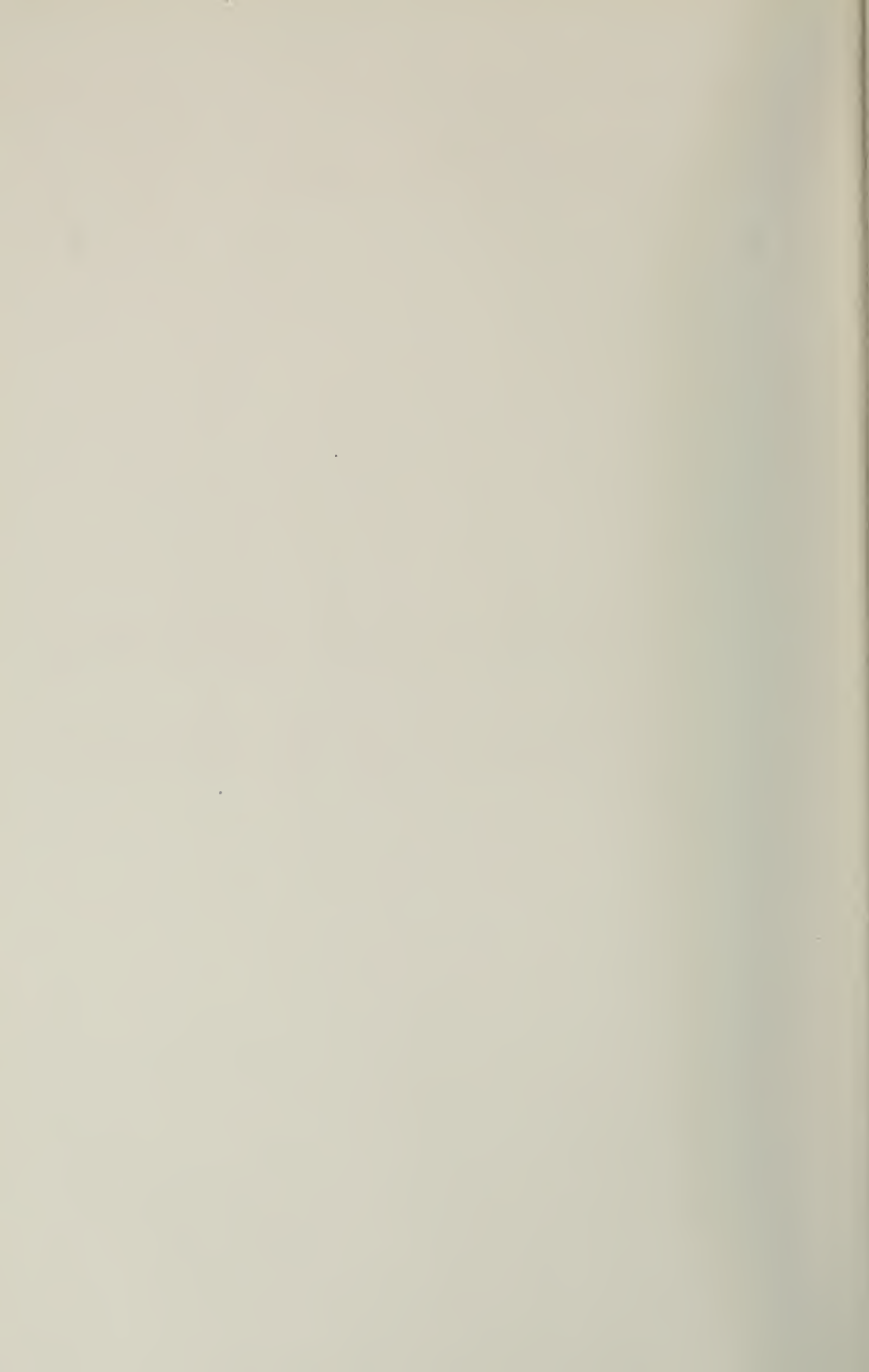


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Making Marines and Winning Battles

The Marine Corps makes Marines and wins battles for the Nation. Our success in accomplishing these tasks has made our Corps the world's premier crisis response force. This past year has again seen our Corps extensively and globally engaged providing forces for forward presence, peacekeeping, humanitarian assistance, support to civil authorities, and major joint and combined exercises. In each instance, our operating forces have met the call. The superb efforts of our Marines in Bosnia, in the evacuation of American citizens from war-torn Liberia and the Central African Republic dominated

the headlines. Less publicized, but equally demanding contingencies at home and around the world further demonstrated that America's Corps of Marines remains essential to our national security strategy.

*Today, the Corps, a **total force** of 216,000 active and reserve Marines, is meeting commitments with responsive, versatile, and highly effective forces. These forces are operating in environments ranging from deserts to densely populated urban areas and the pace is demanding. Since 1990, Marines have responded to 62 crises — an average of one every 5 weeks. This is a considerable increase over the pace during the Cold War — about one every 15 weeks. On average, one-third of Marine infantry battalions, squadrons, and combat service support units are forward deployed, while another third trains for deployment and the remaining third serves in a reinforcing role. Today's Corps is providing a decisive "force-in-use" as well as a "force-in-readiness."*

Marines embarked aboard Navy ships provide the National Command Authority (NCA) with a "rheostat" of national response capabilities. Naval expeditionary forces are a self-sustained air, land and sea strike force, operating from a protected sea base that can be tailored to meet any contingency. Whether deterring through presence, conducting disaster relief or evacuation operations, Marines embarked aboard Navy ships are globally engaged today and prepared for employment tomorrow. Moreover, employment of these flexible forces comes at little or no extra cost because these capabilities have already been bought and paid for! No other nation in the world possesses the politically and operationally flexible "rheostat" of national response capabilities offered by Marine forces aboard Navy ships.

The Corps has long been known as a force of vision and innovation. This legacy lives in the Commandant's Warfighting Laboratory and the "Sea Dragon" series of experiments. We are committed to a vigorous program of exploration and change. The Laboratory is the focal point for pioneering efforts to develop new operational and technological concepts. In the past year, the Laboratory has made significant strides. It was instrumental in the standup of the first Chemical/Biological Incident Response Force (CBIRF). This new, one-of-a-kind unit provides America with a premier consequence management force that is able to respond to chemical or biological terrorist incidents. A national asset, CBIRF has been deployed to support both the 1996 Summer Olympics and the 1997 Presidential Inauguration. The many ongoing efforts of the "Sea Dragon" experiments, focused on a series of Advanced Warfighting Experiments called Hunter, Urban and Capable Warrior hold exciting promise for determining how to fight and win on the battlefields of the 21st century.

*The individual Marine is the lifeblood of our Corps. Today's Marine Corps is composed of the world's finest warriors — disciplined, motivated, and dedicated — fully worthy of those who preceded them. To maintain this distinction and to meet the challenges of the 21st century, we have taken a hard look at the storied process through which we transform the young men and women who seek to become Marines to see if it was correct. It is. We have made it better. A young applicant's first contact with the Marine Corps ethos is the recruiter and the Delayed Entry Pool Program. We have lengthened and toughened recruit training, adding a 54-hour **Crucible** that culminates with each new Marine receiving their Eagle, Globe and Anchor from their Drill Instructor. We have revitalized Marine Combat Training. We have taken the first steps with a cohesion program, focused on forming teams as Marines complete entry level training and keeping them together throughout their first enlistment. We are sustaining and reinforcing the transformation throughout a Marine's career. Transformation will provide stronger, smarter, and more capable Marines, who have the self-confidence, warrior instincts, sense of working together, and the flexibility of mind and body to meet the challenges of the 21st century. And when our Marines return to society, whether after 3 years or 30, America will be better because their sons and daughters have been United States Marines.*

Fighting smartly reflects the Marine Corps commitment to getting the most out of every resource dollar. No other force offers more "bang for the buck" with as broad a range of warfighting capabilities. Right now, the 6 percent of the Defense Budget allotted to the Corps buys 12 percent of the active U.S. forces, 23 percent of the active ground divisions, and 14 percent of all available tactical aircraft.

Navy-Marine forces are organized specifically to be forward deployed and expeditionary. Emergency responses by naval forces normally require no additional operational funding and are more cost effective than conducting or supporting operations from the United States or other land bases. Our cost effectiveness is also reflected in our infrastructure. For example, the Marine Corps has the leanest and least costly rank structure than any other service. Truly, the Marine Corps is, and will remain, the Nation's "force of economy," both now and in the future.

Over the last several years, declining fiscal resources have forced difficult choices between preserving current capabilities and investing in those needed for the next century. Though we have consistently responded to the increasing demands for ready forces and have emphasized programs that support current readiness, this has been at the expense of dollars needed for tomorrow and, more importantly, the day after tomorrow. Marine Corps procurement funding is at an historically low level — far below the level necessary to preserve current capability into the next century. This pattern must be changed if we are to provide the expeditionary force-in-readiness needed for meeting the Nation's interests in the future.

The world's premier expeditionary force-in-readiness, the Marine Corps is well positioned to lead the way into the 21st century. Sustained by a tradition and spirit of innovation and adaptability and the heart of the warrior, the Marine Corps will continue to make Marines as it always has. And America will know, as she always has, that when they send in the Marines they will win.



Charles C. Krulak
General, U.S. Marine Corps
Commandant of the Marine Corps

Chapter One

The Marine Corps — Forging Today's Force for Tomorrow's Battles

For 221 years, the Marine Corps has successfully executed its role in support of the National Security Strategy by making Marines and winning battles. The enduring value of the Marine Corps role and strategic concept was clearly recognized by the 82nd Congress. Their essential conclusion: Marines are a national "core" capability — prepared, ready, forward, responsive to crises; capable of sustained operations from the sea; and structured to enter forcibly, expand rapidly, and fight decisively. Today, this "core" capability remains the Nation's premier crisis response force. With the Navy, Marine forces are the Nation's only fully capable force-in-readiness, totally prepared to project power and influence events anywhere to protect American interests.





Chapter One

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The Marine Corps Strategic Concept

"A versatile, expeditionary force in readiness . . ."

"A balanced Force for a Naval Campaign and a Ground and Air Striking Force . . ."

"Always at a high state of combat readiness . . ."

"Ready to suppress or contain international disturbances short of war . . ."

"To be the most ready when the Nation generally is least ready . . ."

*House Armed Service Committee
Congress of the United States, 1952*

Recent events continue to highlight the Navy-Marine Corps Team's key national security role. Sea-based, combat ready, forward deployed naval forces were involved in more than 28 major operations since 1995 — operations that required immediate responses to protect U.S. interests. Last year, for example, Marine forces rescued American citizens in war-torn Liberia and the Central African Republic; supported security operations in Guam, Iraq, and Bahrain; enforced UN sanctions in the Adriatic and Iraq; assisted humanitarian relief efforts in Bosnia; and conducted counterdrug operations in support of our Nation's own war on drugs. This pace of activity has gained steady momentum in the past several years. While the focus of our national security has changed since the Soviet demise, the need for a strong, ready force that is versatile and powerful has not dwindled.

Marine forces aboard Navy ships provide the National Command Authority (NCA) with a "rheostat" of national response capabilities. Whether responding to natural disasters or to the specter of regional aggression, Navy and Marine forces provide self-contained — and self-sustained — air, land, and sea strike forces, operating from a protected sea base, that can be tailored to meet any contingency. Free of the political



constraints often encountered by forward-based forces, naval expeditionary forces provide the NCA with flexible options to support foreign policy initiatives. If diplomatic activities resolve the crisis, Navy and Marine forces can withdraw without having stepped ashore. If diplomacy fails, naval forces provide a smooth transition from peacetime presence, through deterrent actions, including evacuation of noncombatants, reinforcement of allies, maritime and air interdictions, special operations and seizure of ports of entry, airfields, or vital areas. If the crisis escalates to a protracted conflict, Navy and Marine forces project precise power from the sea and provide vital sealift and deep strike enabling missions in concert with the projection of follow-on U.S.-based forces. The only authority necessary for their commitment to a troubled region is the President — who can turn up or down the "power setting" of his naval rheostat to achieve national security objectives.

Additionally, in response to crises, the Marine Corps high "tooth-to-tail" ratio enables delivery of maximum combat power in the shortest time. Our minimal dependence on reserve forces to initially respond to crises, allows rapid application of our full combat capability. Marine combat support equipment and sustainment are already stored on ships stationed at sea, ready to be met by rapid response Marines in a matter of hours. An example of the versatility that Marine units bring to the fight, was recently demonstrated by the 22d MEU. On 15 June 1996, the forward deployed MEU of only 2,200 Marines and Sailors simultaneously employed small Marine forces in eleven different countries in Europe and Africa, spanning an area dwarfing the total area of the continental United States. Each of the units was precisely tailored to accomplish a specific mission. In short, Marine expeditionary forces are a "cocked pistol," ready to fight and win.

As defense budgets tighten and the Quadrennial Defense Review and the Congressionally-mandated National Defense Panel reexamine defense strategy and future service roles to meet the emerging challenges of the next century, the Corps must extend its legacy of warfighting innovation. To retain its unique and vital role in our national security posture, more will be required than simple incremental improvements in today's organization, tactics, and technology.

The increasing accessibility of advances in technology to zealous, casualty-tolerant "warrior class" groups, will pose new challenges to conventional forces. However, recent "lessons learned" in Somalia, Bosnia, and Chechnya, dramatically demonstrate what Marines have long known; that human factors can always overcome technologies. Further, the U.S. must be prepared to respond to evolving tactics through the imaginative use of both experimental and combat proven technology.

These assessments demand that the Marine Corps reassess the evolving nature of warfare, and how effective military power will be brought to bear. New and innovative concepts will be needed to reshape naval warfare in the littorals to achieve quick, decisive victories with acceptable risks.

Our vision for meeting the challenges of the 21st century builds upon the foundation articulated in the Department of the Navy (DON) White Papers, ". . . From the Sea" and "Forward . . . From the Sea." From that vision, we are developing the Operational Maneuver from the Sea concept for the projection of naval power ashore. When realized, the Marine Corps will have made the leap to the 21st century by melding revolutionary technology with our proven core competencies.

To ensure our success, we have established both an organization and systematic process for instituting innovation. The Commandant's Warfighting Laboratory and our "Sea Dragon" process will provide an experimental test bed for vigorously exploiting new operational concepts, tactics, and doctrine. The successes and lessons learned from these experiments will enhance Marine Corps effectiveness, flexibility, and unique expeditionary capabilities across the spectrum of conflict. These efforts will enable the Corps to continue its record of being "warriors of vision."

Throughout its long and distinguished history, the Marine Corps has been a leader in contributing creative concepts to the American way of war. This century alone has witnessed the Marine Corps development of: the Expeditionary Force Concept in the early 1900s; Amphibious Warfare Doctrine in the 1930s; close air support, as well as helicopter and Vertical Short Take-off and Landing (V/STOL) technology in the 1950s; and the maritime prepositioning concepts in the 1970s. These examples merely represent our numerous and significant contributions to the advancement of warfighting. The Marine Corps single-minded focus in all its endeavors is to provide the premier crisis response force that is ready when called, adaptable to any situation, and decisive when committed. This force is comprised of highly capable men and women who have but one objective: to serve the Nation as its force of choice.

Although the Marine Corps is recognized as a total combined-arms

"By far the most powerful means for dealing with planning uncertainties is through what has become generally recognized as vision. An institutional vision, by clarifying 'an organization's essential sense of identity and purpose,' can resolve many uncertainties by making them irrelevant or inconsequential to the institution's sharply defined purposes."

***Carl Builder & James Dewar
Rand Corporation
Parameters, 1994***

force, equipped with the right mix of platforms and weapon systems to fight effectively, the measure of its combat power has never been organizations or things. The centerpiece of its warfighting capability has been and always will be, people — Marines. Because of diverse tasking across a wide range of operational situations, the Marine Corps measures its fighting strength in numbers and quality of Marines. In short, the Marine Corps equips the man, instead of manning the equipment. Thus, the end-strength of the Corps — the numbers of Marines in its ranks — is a critical measure of its ability to execute its mission. Today, the end-strength of the Corps is adequate to perform assigned tasks; however, the future pace of events could quickly demand more Marines than we are able to supply.

The FY98 budget for the Marine Corps maintains readiness at the expense of modernization — reflecting the difficult choice forced by sharp reductions in defense resources over the last ten years. But tomorrow's readiness depends on today's investment and state-of-the-art training. We must replace our aging, well-used equipment while maintaining an aging infrastructure which is experiencing a growing maintenance back-log. Given the Marine Corps small size, equipment readiness and modernization go hand in hand. Only relatively modest investments are needed to meet these requirements. Assuming they are made, another generation of Americans will be able to say: "The Marines have landed . . . and the situation is well in hand."

National Security Outlook

The Department of Defense (DoD) Joint Strategy Review concludes that the 21st century security environment will be characterized by chaos, crisis, and conflict. The causes of conflict will be complex and dynamic — political ideology, ethnic and religious animosity, proliferation of weapons of mass destruction, and competition for scarce resources. All are potential threats to national interests. The epicenter of instability will likely be the world's littorals, where well over half the world's population lives and over three-quarters of the world's cities thrive. Sea lines of communication and maritime choke points will increase in strategic importance.

The challenge the U.S. will face in the littorals, particularly the Asian Pacific-Indian Ocean littorals, will be diverse and less prone to solution by overwhelming force. These situations will require innovative

"Asia's volatility amid affluence will doubtless cast deep shadows over the 21st Century now struggling to be born."

***Kent E. Calder
Pacific Defense, 1996***

approaches that are truly effective across a wide range of military options. Circumstances will create a pressing need for versatile U.S. military forces, capable of exerting influence and maintaining stability within diverse contingencies. Yet, these forces will need to be powerful enough to win decisively when committed.

Seldom has the relevance and rationale for naval forces — the Navy-Marine Corps Team — been so compelling. As a maritime nation with global economic and security interests, naval forces continue to play a pivotal role in protecting those interests. With their advantage of forward deployment, they are highly responsive to fast-breaking events, and adaptable with precise measures of escalation control. Additionally, they possess significant on-station endurance and credible projection capabilities to influence or resolve events. In sum, there is no better insurance against international uncertainty than sufficient naval forces capable of ensuring unchallenged maritime and littoral supremacy.

“Sea based power projection forces — namely, carrier battle groups, and amphibious groups embarked with Marines — offer to decisionmakers military power that is multifaceted in capability and deployable around the world.”

***Dick Cheney
Former Secretary of Defense***

Naval Forces: The Strategic Framework

Naval expeditionary forces provide unique and versatile capabilities to meet national security objectives. Naval forces provide both continuous forward presence and expeditionary power projection. These enduring capabilities are the centerpiece of DON's strategic direction for the 21st century and are contained in the "... From the Sea" and "Forward ... From the Sea" White Papers. These documents define a new approach to naval warfare and shift the sea services' operational focus toward projecting influence and strength along the world's littorals. This will be done by capturing the unique capabilities of each service and the development of new innovative concepts that will shape future naval forces, thus ensuring continued operational primacy in the next century.

"Operational Maneuver from the Sea" (OMFTS), published in 1996, flows directly from "Forward ... from the Sea" and describes a new approach to the projection of naval power ashore. OMFTS exploits the Navy-Marine Corps Team's expeditionary capabilities and provides a framework for applying maneuver warfare to maritime operations within a joint operations context. OMFTS couples doctrine with diverse technological advances in tactical mobility and conventional weapon

lethality to exploit enemy weaknesses. In the 21st century, naval expeditionary forces will employ these advantages with Marines and Sailors who have been expertly trained to move farther, faster, and decisively to win quick victories.

"Joint Vision (JV) 2010" provides the Chairman of the Joint Chiefs of Staff's (CJCS) strategic direction for the common evolution of the Armed Forces to achieve new levels of effectiveness through joint warfighting. "JV 2010" recognizes that warfighting capabilities brought to bear in joint operations are crafted by the services. The U.S. military's overall strength as a fighting force is a function of service competencies — reflecting distinctive capabilities, cultures, and traditions. Additionally, these core competencies, alone and together, offer a broad range of options to the National Command Authority. In this regard, the operational themes called for in "JV 2010" are entirely compatible with ". . . From the Sea" and "Forward . . . From the Sea." These papers emphasize the unique capabilities of sea-based forces and highlight their utility in a joint warfighting environment. They provide consistent direction for further development of modern naval expeditionary forces into the next century.

As members of the Joint Team and with "Forward . . . From the Sea" and "JV 2010" as guides, the Navy and Marine Corps are aggressively preparing for the future warfare environment. Organizations such as the Naval Doctrine Command and the Marine Corps Combat Development Command (MCCDC) continue to develop innovative concepts to enhance the sea-based capabilities of the joint force. New and promising opportunities in tactics, technology, and training will be evaluated through planned test programs under the Commandant's Warfighting Lab and the Navy At-Sea Battle Lab. These organizations will provide creative momentum to challenge the status quo. Their successful results will move the Navy-Marine Corps Team confidently into the future.

The Future of Naval Warfare

Our concepts and strategic framework expand the application of maneuver warfare to maritime power projection. Operational Maneuver from the Sea will create synergy through the integration of forces afloat and ashore with technological advances in speed, mobility, communications, and navigation. We will rapidly exploit enemy weaknesses across the conflict spectrum. Naval expeditionary forces will capitalize on the advantages of maneuver at and from the sea. We will provide continuous over-the-horizon presence and warfighting capabilities from carrier battle groups and amphibious ready groups — able to decisively reach inland objectives in support of national interests.

These operational capabilities anticipate the very diverse threats the U.S. will face in the chaotic littorals. They reflect the Nation's long-standing reliance on naval forces to influence events overseas. Naval expeditionary forces are essential elements of both peacetime engagement and crisis response operations. These forces are sized to provide staying power and equipped to win battles. In situations short of war, Navy and Marine Corps forces will be engaged in forward areas demonstrating U.S. resolve, preventing and containing crises, reassuring allies, and enabling successful coalition operations. Forward presence is both the foundation of, and the springboard to maintaining regional stability in order to protect our Nation's interests.

Sea-based forces are sovereign extensions of our Nation in international waters. They are unencumbered by territorial claims, treaties, and access agreements. Their military capabilities caution potential belligerents and assure America's friends that the entire military force of the United States may be brought to bear. Naval forces sustain forward presence virtually independent of foreign infrastructure. This capability has already been bought and paid for. Sailors and Marines are forward deployed, operating and exercising in international waters, and can rapidly respond to a crisis **before** it escalates. Naval expeditionary forces will remain highly flexible and cost-effective tools of U.S. global influence both today and tomorrow.

Embedded in a credible, responsive, sea-based force is its forcible entry capability. OMFTS doctrine and new technology will allow assault forces to be physically dispersed at multiple, decisive points while being linked electronically — able to share real-time information. Command, control, and support of landing forces will be seamless. The naval expeditionary force will be able to locate and defeat mines and other anti-ship defenses, while deceiving and disrupting the enemy. Naval expeditionary forces will continue to provide the Unified Commanders task-oriented and appropriately sized Marine Air-Ground Task Forces (MAGTFs), sea-based medium range attack aircraft, and long-range, sea-launched cruise missiles. Critical to the success of OMFTS is sufficient amphibious lift to move credible expeditionary forces across the ocean, while possessing the landing craft and airlift required to rapidly project Marines and their equipment ashore. Equally critical and unique to the Marine Corps forcible entry capability is its inherent organic sustainability.

“Presence is important, first, for security and stability and second, for investment.”

***Sheikh Hammad bin-Jassim
al-Thani
Minister of Foreign Affairs,
Qatar, January 1996***

Naval forces are unique national security assets. In a dynamic and unpredictable security environment, these forces provide a full range of choices to the Nation as a hedge against uncertainty. As Navy and Marine Corps units have demonstrated many times, they are accustomed to dealing with uncertainty and adroit at handling adversity. As defense resources decline and overseas bases continue to be reduced, the utility of naval expeditionary forces will continue to increase.

Enduring Marine Corps Capabilities

Success is critically dependent upon two unique Marine Corps capabilities — the expeditionary character of the Corps and its forcible entry, combined-arms team. Together with our Total Force concept, we provide potent, enduring capabilities for successful naval presence and power projection operations. The Marine Corps primary role is to provide Fleet Marine Forces of combined arms, including integrated aviation and logistical components, for service as part of a naval expeditionary force. In this role, the Marine Corps supports the Unified Commanders and the National Security Strategy with globally responsive assets. The Marine Corps enduring capability to provide expeditionary combined arms forces will remain a unique and essential component in support of joint operations.

"The United States Marine Corps is a three-in-one Service in embryo. It has gained so much experience in combining land, sea, and air action that it forms a nucleus and a pattern for future development. Logically, it should be the basis for further progress in integration."

B. H. Liddell Hart

Expeditionary Readiness

As our 21st century National Security Strategy continues to evolve, the tenet of being "expeditionary" is taking on an increased importance. Although new to some, "expeditionary" has long been deeply ingrained within every Marine. To a Marine the term means more than ***being able*** to rapidly project forces to defeat an enemy on his own shores, it means ***how*** we project our forces. It means embarking aboard amphibious shipping or, if the situation dictates being flown in via strategic airlift at a moment's notice and being responsive and resourceful. It means deploying to an austere environment and minimizing our logistical footprint while operating within barren surroundings with little or no supporting infrastructure. Throughout the Cold War, Marines deployed 365 days a year around the globe and honed their skills at operating across the breadth of the world's geography and weather. Having not fixated on a single, well-defined threat, the Marine Corps has not become

dependent on a large system of overseas bases. Far from being hampered by austere environments, Marines will thrive and exploit the opportunity.

Maritime Prepositioning Force (MPF)

MPFs are a significant component of the Marine Corps expeditionary capability. Three Maritime Prepositioning Squadrons (MPSRONS), capable of delivering equipment and supplies to support a Marine Expeditionary Force (MEF) of one division, one wing, and one force service support group, are strategically located just a few days steaming time from likely crisis locations. With their capability to offload pierside or at sea, these forces can go ashore even when faced with primitive or nonexistent port facilities. Perhaps more importantly, the MPF carries sufficient quantities of all classes of supplies to allow the supported unit to operate without concern for whether tomorrow's beans and bullets will arrive on today's airlift. The MPF provides the Nation a strategic deployment capability that is global in nature, naval in character, and suitable for employment across the full range of potential operations.

Marine Aviation

Marine aviation's expeditionary character make it unique among aviation organizations. Alone among the aviation branches of the armed forces, Marine aviation can rapidly transition between sea and shore bases without loss of capability. Both the FA-18 and the AV-8B Harrier can operate from sea-based platforms and can quickly transition ashore to operate from expeditionary airfields. The Harrier can operate from extremely austere and confined forward operating sites unusable by other tactical jet aircraft. Additionally, Marine fixed and rotary wing aircraft have been designed to provide a multi-mission capability. Marine aviation's commitment to expeditionary warfare is demonstrated by its unparalleled ability to quickly transfer ashore and then to operate from austere bases and hastily constructed runways.

The reusable expeditionary airfield (EAF) system allows expeditionary forces to construct and operate stand-alone airfields. This significant operational capability has no equal and provides numerous employment options to the commander. The logistical support needed to sustain Marine aviation ashore for extended periods in austere theaters can be embarked aboard two Aviation Logistics Support Ships. These ships are specially configured to onload and transport critical aviation maintenance and supply support to a forward operating area. Focused, versatile and responsive to the needs of ground forces — Marine aviation is indeed a force multiplier.

Combined-Arms Concept

A second enduring characteristic of the Corps is its combined-arms concept and employment. The Marine Corps exploits the synergy inherent in closely integrated air and ground operations. Effectively blending infantry forces, artillery, armor, and tactical aviation from the water's edge to deep inland targets, the Corps generates maximum combat power with a minimum logistical footprint. Our air, ground and logistic components work together on a daily basis and deploy routinely as combined arms components of naval expeditionary forces.

Marine Air-Ground Task Forces (MAGTFs).

MAGTFs are the organizational means through which Marine forces are tailored to meet specific operational requirements. Depending upon the mission for which they are structured, they may include a wide range of combat power, including infantry, tanks, amphibious assault vehicles, light armored vehicles, artillery, and aircraft. MAGTFs range in size from small special purpose units to large Marine Expeditionary Forces (MEFs). These task-organized, self-sustaining, rapidly deployable units provide combat power across a wide spectrum of operations. From short duration amphibious raids, to large-scale forcible-entry assaults, each MAGTF is an integrated combined-arms team comprised of the following combat elements:

Command Element (CE). Provides inherent capabilities for exercising joint force command and control, intelligence fusion, and crisis action planning. It supports the overall operational objective of dominant command, control, and surveillance for naval expeditionary forces.

Ground Combat Element (GCE). Conducts ground operations, using amphibious craft and transport helicopters, maneuvering from the sea, thus permitting the naval expeditionary force to project combat power ashore at a time and place of its choosing.

Aviation Combat Element (ACE). Conducts air operations and assists the naval expeditionary force to achieve its objective of battlespace dominance by providing the following six functions: anti-air warfare, assault support, offensive air support, air reconnaissance, electronic warfare, and control of aircraft and missiles. The ACE may be employed from ships, forward expeditionary land bases, or a combination of both. Close air support aircraft significantly add to the firepower necessary to ensure success of our combat elements.

Combat Service Support Element (CSSE). Provides a full range of support functions while operating from sea bases aboard naval shipping or from expeditionary bases established ashore. The CSSE enables the sustainment of forces by extending capabilities in time and space,

supporting the full range of peace and wartime operations, and permitting the commander maximum flexibility in shaping a response to crisis.

The Marine Corps combined-arms concept is unique and an enduring feature of our preparedness. This experience has enabled the Corps to work effectively with other services and allied forces. Moreover, the Corps has excelled at innovatively adapting existing capabilities developed by other organizations for use in new applications. Marine forces are interoperable, both internally and externally, and effective in joint and combined operations. As operations become increasingly joint, the Marine Corps is well prepared to make significant contributions to integrated operations with the other services. In addition to close cooperation with the Navy, Marines have fought and operated effectively alongside Army, Air Force, and allies in the past and are better prepared to do so in the future. Because of its air-ground integration and close ties with the Navy, the Marine Corps has always been a "joint" force and will continue to train, fight, and win as a team.

Total Force

The Marine Corps Reserve is an essential part of the expeditionary force team. Reserve units routinely exercise with the active forces and are assigned missions that lead to relevant, actual combat responsibilities. From Guadalcanal through the Chosin Reservoir to the Gulf War, a distinguished and essential contribution from the Marine Corps Reserve has been a standard feature of Marine Corps combat operations. Our Reserves share the same commitment to readiness as their active duty counterparts. One of the advantages of the Marine Corps as a force-in-readiness, is that it does not have to pause to call up the Reserves to provide a capability lacking in the active component. But when Marine Reserves are called to respond, they move out quickly and demonstrate tactical abilities virtually indistinguishable from their active duty counterparts.

The Way Ahead — Riding the Dragon of Change

The Chinese have a saying that "change is a dragon." To avoid its lethal powers and survive and perhaps prosper, one must embrace change and ride the dragon. To maintain future readiness and to enhance the Marine Corps unique capabilities to meet emerging security challenges, we are aggressively exploring, adapting, and testing new and innovative ways of dominating the battlespace and winning decisively. Our central focus is the individual Marine weapon system and its improved survival and effectiveness in combat. Our operational framework is the OMFTS concept and the use of technology to tie the Navy and Marine Corps

together more closely to create a seamless battlefield. This integration will encompass not only air and ground operations, but will also merge sea and land operations into a common unified system. Making OMFTS a reality requires that we focus our efforts today and in the future on improving operations, modernizing our capabilities, and strengthening our intellectual underpinnings. The Marine Corps has only begun to exploit the opportunities offered by digital communications, robotics, precision guidance, micro-miniaturization, and a host of other technologies. In addition to the infusion of modern technologies, we are defining and evaluating new warfighting, doctrinal, and organizational concepts to leverage the missions we face. Continuing the Marine Corps long and successful tradition of being warriors of vision, the following institutions and initiatives show the way ahead:

"There is nothing more difficult. . . , nor more doubtful of success, nor more dangerous. . . , than to initiate a new order of things. For the reformer has enemies in all those who profit by the older order."

Machiavelli

❑ ***Operational Maneuver from the Sea.*** This new operational concept for forcible entry provides the joint task force commander with the unique ability to maneuver combat forces over and from the sea to the high value objective areas without the traditional impediment of stopping or pausing at the water's edge. Three key programs, each the "cutting edge" of technology, are well underway towards making this concept a reality. They are: A tiltrotor aircraft (MV-22 Osprey), an Advanced Amphibious Assault Vehicle (AAAV), and the Landing Craft Air Cushion (LCAC) vehicle already in operation. These visionary enhancements open a new window to power projection operations and provide a framework for exploiting the Navy-Marine Corps Team's expeditionary capabilities. Other initiatives being explored include: Ways and means of controlling operational tempo to achieve dispersion of forces while simultaneously concentrating combat power; new decision support processes to fight the Special Purpose Marine Air-Ground Task Force (SPMAGTF) as an integrated unit; a mobile, combined arms company with organic firepower; and, a non-traditional combat service support element to provide end-user oriented distributions for tactical logistics.

❑ ***Commandant's Warfighting Laboratory.*** Established in October 1995 as the centerpiece for the operational enhancement of the Corps, it is now well underway. Its mission is to ensure the expeditious introduction of emerging technologies and advanced operational concepts, tactics, and techniques into the Fleet Marine Forces. The CWL's Five Year Experimentation Plan (FYEP) is divided into three phases —

Hunter Warrior; Urban Warrior; and, Capable Warrior. Hunter Warrior, now ongoing as the first Advanced Warfighting Experiment, will explore naval expeditionary force influence in the early stages of conflict. The FYEP is ambitious, and inextricably tied to the Navy. Its objective is to improve Navy and Marine Corps capabilities across the spectrum of conflict.

❑ ***Sea Dragon.*** This is the Marine Corps philosophical commitment to innovative change. It energizes and encourages challenges to the "business as usual" approach. It is a process for the technological exploitation and development of operational concepts. Sea Dragon seeks to build on existing strengths to create new and competitive advantages in future combat. It encompasses inquiries into multiple technology and warfighting areas, including fires, biological/chemical weapons, command and control, non-lethal weapons and technology, expeditionary logistics, and advanced training and education techniques. These core areas enable interface and leveraging of similar warfighting organizations within DoD, universities, and private industry.

❑ ***Chemical/Biological Incident Response Force (CBIRF).*** In recognition of the potential threat of chemical or biological terrorist incidents, the Marine Corps has spearheaded an innovative, first-of-its-kind organization. The CBIRF is structured and equipped so that it can be electronically connected to a diverse group of knowledgeable specialists located at universities, hospitals, and government organizations around the U.S. In the event of a chemical or biological incident, the CBIRF implements its network of government and civilian experts to provide on-scene consequence management. The CBIRF was first deployed in support of the 1996 Centennial Olympic Games in Atlanta and recently supported the 1997 Presidential Inauguration.

❑ ***Non-Lethal Weapons.*** The Commandant of the Marine Corps has been appointed by the Secretary of Defense as the Executive Agent for this program and is required to expedite development and fielding of the weapons. This program is in direct response to the need for greater flexibility by military forces in dealing with operations other than war. Success in these situations requires reducing tensions while establishing control of potentially explosive events. Employing weapons that can protect a deployed unit without using deadly force is one means of diffusing tensions in potential hot spots.

❑ ***Transformation.*** Building on the Marine Corps tried and proven method of making Marines, we undertook a comprehensive review of the life-cycle of the individual Marine. While we needed no reminder of the importance and validity of our recruit training process, we did identify

enhancements that will produce better, tougher Marines over the long haul. The objectives of these enhancements, which we call "*Transformation*," are to enhance our warrior ethos by instilling more self-confidence, greater strength of character, and a more common set of values to guide Marines both on and off the battlefield. A secondary benefit to the Nation is that upon completion of military service, we return a more responsible and productive citizen to the civilian community. The program is comprised of four elements: A transformation process, the "Crucible," a values program, and assignment policies that enhance unit cohesion. Our recruiters begin the transformation process by immediate inculcation of our core values of honor, courage, and commitment. The culmination of the recruit training experience is the "Crucible," a training regimen of intense moral, mental, and physical challenges designed to build team integrity and strengthen unit cohesion. Upon program completion, personnel assignments will be structured to enable recruit teams to report to their first units together, making unit cohesion fully operational. Values training will continue throughout the career of each Marine. These initiatives will ensure that our Marine Corps team will be immediately ready and highly capable performers in all future contingencies.

❑ ***Standing Joint Task Force Headquarters.*** This initiative explores the development of Joint Task Force (JTF) Command and Control capabilities in Marine Expeditionary Units. The Second Marine Expeditionary Force (II MEF) is leading the effort to establish a premier, standing JTF Headquarters. The Corps possesses extensive operational expertise in integrating multi-service command and control doctrines into an effective joint headquarters. Developing a standing JTF HQ capability as part of its forward operating naval expeditionary forces will significantly improve the introduction of follow-on joint and combined forces. Once operational, the JTF will provide an immediately available headquarters for the National Command Authority and CINCs to rapidly plan responses to emerging crises.

❑ ***Modeling and Simulation.*** This technology is critical to developing improved battlefield decision-making skills at the unit and individual levels. Modeling and simulation is actively being pursued to increase Marine Corps operational and training effectiveness. A major benefit of the application of simulations is reduced time and cost of weapon system development.

❑ ***Marine Corps Continuous Process Improvement Program (MCCPIP).*** The Marine Corps Business Process Reengineering (BPR) effort, introduced in 1992, continues to assess key management processes and functions to achieve improvements and cost efficiencies. This past year,

Headquarters, U.S. Marine Corps and the Marine Corps Combat Development Center worked closely to consolidate all resource and force structure management, while realigning our manpower process.

Safely navigating from the Marine Corps of today to the Marine Corps needed in the 21st century demands creative and innovative leadership. To ensure we retain an adaptive and flexible force capable of winning when committed, our future lies in the success of our training and education program. This program will emphasize development of rapid decision making, and the honing of skills needed to translate judgments and decisions into relevant orders and staff actions. The ability to thrive under duress, and effectively execute across the spectrum of conflict will ensure future tactical and operational success.

A Corps for the 21st Century

The Corps is the Nation's expeditionary force-in-readiness, well prepared to handle a variety of missions on short notice, under any circumstance and win — decisively. The Marine Corps will continue to be recognized for its unique and essential capabilities of preparedness, adaptability, and combat excellence across the entire continuum of conflict. The Marine Corps, with the Navy, will be our Nation's force of choice — first on scene, first to contain disturbances, and first to fight. To achieve this objective, we must always channel the vitality and innovation of our Marines, Sailors, and civilians. When combined with our success in leveraging opportunities through advances in technology, the maritime component of the joint warfighting team will continue to set the standard for superior military effectiveness.

Forward-operating in fully capable combined-arms teams, Marine Corps forces are on the scene, ever ready to protect the Nation's interests. We will remain fundamentally a naval expeditionary force, as comfortable on the seas as on the land and in the air. With the Navy, we will be able to rapidly go anywhere and project force across any shore, against any foe, while sustaining ourselves from sea or expeditionary land bases. We will be a learning organization, able to anticipate and adapt quickly to any challenge. We will continue to be a force rich in history and traditions and imbued with the highest values of honor, courage, and commitment. We will be a total force, able to effectively integrate active and reserve components across a full range of capabilities. Combining with other services, agencies, and

“Some men see things as they are and say ‘why?’ Others dream things that never were and say ‘why not?’”

Robert F. Kennedy, 1968

nations, we will provide essential capabilities to form a unified and focused instrument of national power. We will continuously exploit the latest technologies, concepts, and methods to enhance the operational effectiveness of our forces. And, as we have always been, we will be an economical force, providing our Nation a high return on its investment.

The cornerstone upon which we will build this superb armed force is the world's finest military professional: the United States Marine — a disciplined, motivated and dedicated warrior. Tomorrow's Marine will be a smarter, stronger Marine, imbued with the values that have served us well throughout our history, and infused with the endurance and agility of mind and body which will be required in future conflicts. All Marines, enlisted and commissioned, junior and senior, will be educated to act intelligently and independently, trained to seek responsibility, and expected to act with boldness and individual initiative. Regardless of specialty, all Marines will be trained first as riflemen, able to defend themselves and their units. We will forge these highly capable individuals into flexible yet unbreakable units, and into a single Marine Corps, through the enduring bond of our unique esprit.

The two most important things the Marine Corps does for our Nation are making Marines and winning battles. Our successes have earned the respect and confidence of the American people — the Marine Corps will not fail them.





Chapter Two

Concepts & Issues

All the armed services have had to reexamine their strategic concepts and the unique contributions they bring to the joint family of military capabilities. Declining resources and a possible transformation in the nature of warfare, as a result of revolutionary technologies and ideas, have forced this self-examination. Debate on the following issues is an essential part of the National Security process and an important means of ensuring an effective and affordable defense posture.

In this environment, achieving support for those concepts and programs which underpin the maintenance of highly capable Marine Corps forces requires an informed consensus among the public, industry, Congress, and the national leadership. This chapter presents key concepts and issues facing the Marine Corps that are important to the debate.



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Power Projection Capabilities

Discussion

Rapidly projecting decisive military power is key to the National Military Strategy (NMS) in which Marine amphibious and maritime prepositioning forces play a critical role. Revitalizing the necessary platforms and improving the effectiveness of these expeditionary forces is a major goal. To fully exploit development of these capabilities, the Marine Corps will consistently blend advances in technology with newly developed operational concepts. Today, the Navy-Marine Corps team is rapidly implementing our strategic and operational concepts of "Forward . . . from the Sea" and Operational Maneuver from the Sea (OMFTS) to take full advantage of the littoral environment and the maneuvering space it provides. Emerging technology now makes the OMFTS concept a near-reality and enables a tremendous increase in the flexibility, agility, and lethality of our Marine expeditionary forces — significantly expanded naval power projection capabilities. The following initiatives are key to the achievement of our operational objectives:

❑ ***Advanced Amphibious Assault Vehicle (AAAV)*** is critical to our future ability to project power inland from amphibious ships. Increased speed and survivability allow a faster buildup of combat power ashore, ensuring greater force survival and effectiveness to fight the land battle. These capabilities expand our ability to implement tactical maneuvers from ship to objective area from over-the-horizon, creating significant operational advantages. The AAAV will replace the current AAV7A1 family of amphibious assault vehicles, which will reach the end of their service life within the next ten years.

❑ ***MV-22 Osprey tiltrotor aircraft*** (part helicopter/part fixed-wing aircraft) allows combat power to transition ashore faster and increases the depth of the battlefield through its enhanced range, endurance, and flexibility. It replaces the aging medium lift CH-46 Sea Knights and CH-53 Sea Stallions. While fulfilling the Marine Corps critical medium lift requirement, the MV-22's increased capabilities provide significant tactical and operational leverage. The MV-22 is integral to making OMFTS a reality.

❑ ***Maritime Prepositioning Force*** (Enhancement) alleviates shortfalls in the existing Maritime Prepositioning Ship (MPS) squadrons and provides new capabilities to correct deficiencies highlighted during ***Desert Storm***. These new ships will carry additional equipment and supplies to include: An expeditionary airfield, a Naval Mobile Construction Battalion, and fleet hospital equipment. The result will be a much more capable Maritime Prepositioning Force (MPF).

❑ **Shallow Water Mine Countermeasures (SWMCM)** program is designed to improve critical deficiencies in mine countermeasures. The development of technology and systems to detect, clear, and neutralize these threats is vital to allow our forces to maneuver unencumbered throughout the littoral areas and to effectively project power ashore.

❑ **Naval Surface Fire Support (NSFS)** is an essential dimension of our power projection capabilities. The current program is focused on development of a high energy modification to the existing 5-inch/54 caliber gun and the Extended Range Guided Munitions (ERGM). This program is expected to meet Marine Corps operational requirements by FY01. The long-term program calls for the development of a larger caliber gun and the ship-board adaptation of extended range missile systems similar to ATACMS, SEA SLAM, or standard strike variants. These enhancements will provide a critical boost to Marine amphibious capabilities and result in extended, more accurate, and more lethal support to maneuver forces ashore.

❑ **M1A1 Main Battle Tank (MBT)** provides the direct fire needed by the Marine Corps in its role as the early arrival expeditionary force. As the Corps uses both its active and reserve tank battalions in responding to expeditionary operations, both components require and possess the lethality and survivability of the M1A1. To fulfill operational requirements, M1A1 tanks are embarked aboard Maritime Prepositioning Ships.

Marine Corps Position

Technological advances enable the Marine Corps to rapidly move OMFTS from the concept stage to reality. Our acquisition focus will be on the technological initiatives that improve the mobility, flexibility, and lethality of our Marine expeditionary forces in a cost-effective manner. Support for these programs will be in concert with both the National Military Strategy and the objectives of the Marine Corps in supporting this strategy.

Advanced Amphibious Assault Vehicle

Discussion

In the 1980s, the Navy and Marine Corps developed the concept of over-the-horizon (OTH) assaults to avoid enemy strengths, exploit enemy weaknesses, and protect Navy ships from increased land and sea-based mine threats. Together with the MV-22 Osprey tiltrotor aircraft and the Landing Craft Air Cushion (LCAC), the AAV Program will complete the amphibious triad needed to fully implement the OTH concept. Each component of the triad is critical to execute OTH assaults. The AAV is especially important in providing a surface assault force that can quickly secure a landing area and rapidly build up forces to face increasingly sophisticated threats. The AAV's swift and independent transit from OTH provides the spear of the assault and allows LCACs to immediately bring in the needed supporting firepower. This one-two punch may very well be the decisive factor in the success of the assault. In addition to its greatly increased speed on the water, the AAV will provide superior land mobility and tremendously increased firepower compared to the current assault vehicle.

The AAV's unique capabilities include: (1) over three times the water speed of the current AAV7A1; (2) nearly twice the armor protection of the current AAV7A1 (already enhanced by applique armor); (3) the ability to defeat future threat light armored vehicles; (4) land mobility equal to or greater than the M1A1 tank; (5) lift and carrying capacity for a reinforced rifle squad; and (6) the only amphibious infantry NBC collective protective combat vehicle system in the U.S. inventory. All of these capabilities will increase the survivability of the amphibious assault forces and the flexibility of future Task Force Commanders.

Marine Corps Position

The AAV Program will allow the Navy and Marine Corps to seamlessly link maneuver at sea with maneuver ashore. It provides a critical capability for OTH forcible entry that is a key component of OMFTS.

MV-22 Osprey

Discussion

Today, the Corps stands on the threshold of a revolutionary capability employing 21st century technology. Recognizing the tremendous operational advantages of tiltrotor technology, the Marine Corps has championed the development of this innovation. The impact of this capability will be as far-reaching as the Marine Corps introduction of helicopters on the battlefield in the Korean War.

In December 1994, the Secretary of Defense announced the decision to replace the CH-46 Sea Knight with the MV-22 Osprey. The new tiltrotor aircraft has greater speed, range, and payload. It will carry 24 combat-loaded Marines. The MV-22 will enable the MAGTF to exploit its combat power and more effectively apply the concepts of OMFTS well into the 21st century.

Strategically mobile, the Osprey is capable of global self-deployment with its aerial refueling ability. The combination of range, speed, and payload of the MV-22 nearly triples the depth of the present day battlespace. This significantly complicates an enemy's defensive requirements and inhibits his opportunity to concentrate his forces. This aircraft provides Navy ships adequate stand-off distance from enemy shore-to-ship missiles, enhanced observation devices, underwater mines, and other developing threats. With a cruising speed in excess of 250 knots, the MV-22's greater speed and designed-in survivability will reduce combat fatalities, saving our most valuable asset — American lives.

In today's regional environment, the expeditionary Marine is the most capable and cost-effective option among deployable conventional forces. The arrival of the MV-22 in the Fleet Marine Force will provide the decisive edge needed to prevail against the increasing sophistication of regional aggressors.

Marine Corps Position

Marines will need the capabilities identified in our concepts in order to win quick, decisive victories with minimum casualties in the battlespace of the future. The acquisition of the MV-22 represents a tremendous improvement in our ability to project power from over-the-horizon towards inland objectives in support of our OMFTS doctrine. The MV-22 remains the Marine Corps number one and most critical acquisition priority.

Maritime Prepositioning Forces

Discussion

Maritime Prepositioning Forces are naval power projection assets that significantly support the employment of naval expeditionary forces. The three current Maritime Prepositioning Ship squadrons, composed of thirteen ships, provide our Nation a unique geo-strategically prepositioned capability. Employment of MPS assets during ***Desert Shield/Desert Storm*** and ***Vigilant Sentinel*** against Iraq, and in ***Restore Hope*** and ***Continue Hope*** in Somalia, decisively demonstrated the utility of these expeditionary assets. Coupled with Marines and Sailors flown in, MPF provided the first substantial ground defense, humanitarian relief, and security capability in-theater. Further, MPS squadrons provided sustainment for U. S. Army units in the first month of Operation ***Desert Shield***.

Lessons learned during these operations revealed the need for improvements in MPF lift capacity. Our MPF enhancement program will add an additional ship to each squadron (for a total of three additional ships). These additional ships will be loaded with heavy engineer support equipment, fleet hospitals, Marine Corps joint task force infrastructure equipment, and expeditionary airfield (EAF) sets. The EAFs will dramatically increase our combined arms combat power without dependence on existing airfields or aircraft carriers. In support of this concept, Congress has appropriated a total of \$360 Million for the purchase and conversion of the three MPF (Enhancement) ships. The first of these ships is expected to enter service in FY00.

Marine Corps Position

The MPF concept remains a relevant and proven capability that provides a cost-effective increase to U.S. crisis response capabilities. It is consistent with "Forward . . . From the Sea," and significantly increases responsiveness to contingencies and improves operational flexibility for combat, disaster relief, and humanitarian assistance operations.

Mine Warfare

Discussion

This essential warfare capability is integral to the ability of naval forces to effectively open and maintain sea lines of communication and to dominate the littoral battlespace. A considerable array of modern mine countermeasures systems continues to be developed and procured for mine countermeasures (MCM) forces. With the recent addition of MCM command and support ship USS *Inchon* (MCS-12), the U.S. has a true expeditionary mine countermeasures capability.

Our airborne MCM (AMCM) forces provide the only truly rapid deployment MCM capability available today. Currently being fielded with our AMCM forces, the enhanced minehunting capability of the new AQS-14A digital sonar processor greatly increases minehunting readiness and sustainability. AMCM forces are also receiving improved MK 105 Mod 4 sweep sleds with longer mission life, greater power, and much improved reliability.

Surface MCM (SMCM) force capability also continues to increase. The last of the fourteen MCM-1 class ships has been delivered and is in service. The Osprey class coastal mine hunters (MHC) are being delivered at a rate of two per year and are performing as designed. Working closely with our surface and airborne MCM forces, Navy EOD systems are being fielded that improve the diver's ability to locate and neutralize mines.

Focused S&T and developmental efforts are producing technological solutions to difficult mine warfare problems. For very shallow water, efforts such as the Shallow Water Assault Breaching System (SABRE) and the distributed explosive technology (DET) net system are in development. These two complementary systems are designed to defeat mines and obstacles in the difficult surf zone region. Another system being supported within our program to improve our organic MCM capability is the Remote Minehunting System (RMS) which will provide an organic, surface ship-hosted mine reconnaissance capability.

Marine Corps Position

Forward-deployed naval forces will be the primary forces shaping the battlespace in the early stages of crisis or conflict. In order to maximize our naval expeditionary force capabilities, unencumbered maneuver is required. Mine warfare concepts under development underscore this objective by providing capabilities to detect, avoid, or eliminate the mine threat and enable battlespace dominance.

Naval Surface Fire Support

Discussion

OMFTS has placed increasing demands on Naval Surface Fire Support (NSFS). Sea-based fire support will be required to support the joint air-land battle, integrate all fires with maneuver over an extended battlespace, and provide various types of fires and levels of responsiveness against enemy warfighting capabilities. Near and mid-term initiatives to meet NSFS requirements include improving existing guns and developing an extended range guided munition (ERGM) and a rapid response land attack missile.

The modification of the current shipboard 5-inch/54 caliber gun mount, in conjunction with the development of an ERGM, will fulfill the near-term NSFS mission need. The ERGM is a 5-inch projectile with an improved rocket motor and guidance system which will provide a range capability in excess of current ballistic missiles (40-60 nautical miles (NM)). The ERGM gains enhanced range and accuracy by combining the Global Positioning System and the inertial navigation system with ground and composite technologies. This will enable surface ships to engage targets ashore in excess of 60 NM, and potentially, to greater than 100 NM. The warhead will accommodate submunition bomblets which are effective against troops and light armor.

The Army's Tactical Missile System (ATACMS) is a medium range weapon that provides a quick response strike capability to support naval expeditionary forces within 10 minutes of the "Call for Fire." The Navy is evaluating a version of the Army missile for naval sea-based fire surface support. The quick response strike capability of a TACMS makes it well suited to engage mobile C2, air defense, and cruise missile launch platforms. A joint Army/Navy project currently underway will develop and test a warhead which will give TACMS the capability to destroy deeply buried or hardened targets, e.g., facilities used for Weapons of Mass Destruction (WMD) production and storage. Also under consideration is modification of the Navy's Standard missile for the surface to ground strike role. Studies are underway to determine the most cost-effective solution to providing a rapid response, all-weather strike capability to support naval expeditionary operations ashore.

Marine Corps Position

Current and future NSFS requirements are being addressed by munitions and hardware improvements. These improvements will enable NSFS to effectively support OMFTS operations and give the MAGTF commander greater operational and tactical flexibility in executing his missions.

Amphibious Shipping

Discussion

Naval expeditionary forces, with embarked Marines, provide forward presence and flexible crisis-response forces for the execution of foreign policy objectives. These forces provide the most formidable forcible entry capability in the world. The development and maintenance of these capabilities are the direct responsibility of the Marine Corps as directed by Congress in the Title X roles and missions legislation.

Amphibious lift requirements are derived from assessments that were developed to support the National Military Strategy (NMS). Total lift capacity must be tailored with the right numbers and the right types of ships to meet real world day-to-day commitments as well as combat surge capabilities.

Current forward deployment tempo requires twelve Amphibious Ready Groups (ARGs) to meet U.S. forward presence commitments in the Mediterranean, Persian Gulf, and Western Pacific. The big deck amphibious ships (LHA/LHD/LPH) are the heart of every ARG, and currently 11 big deck ships are in the inventory. The current program will bring the number of big decks to twelve, as three new LHDs will replace two aging LPHs over the next five years.

The Mobility Requirements Study (MRS) indicated the need for approximately 3.0 Marine Expeditionary Brigade (MEB) equivalents of surge lift. Fiscal constraints, however, have limited the lift to a programmatic goal of 2.5 MEB equivalents. Current shortfalls in vehicle lift are being alleviated by Navy initiatives to maintain several LKAs and LSTs in the Naval and Ready Reserve Force. This will reduce the shortage of lift until ships of the LPD 17 class are commissioned into service.

The shortfall in amphibious shipping to support the NMS remains an area of concern. Early retirements and block obsolescence have sharply reduced the total number of amphibious ships. Accordingly, the LPD 17 program, designed to be the functional replacement for the lift provided by four ship classes (LPD-4, LSD-36, LKA, LST), becomes essential. This program provides an affordable, air-capable, LCAC-capable, wet-well ship that is optimized to meet the required demands.

Marine Corps Position

Astute and thoughtful investment in the amphibious ship-building program is required. Naval expeditionary forces require a 12th big deck (LHD) to support worldwide forward presence. We support a near-term start-up of the LPD 17 program with a procurement profile that will provide funding for the quickest, most economical commissioning of all twelve ships.

Medium Tactical Vehicle Remanufacturing Program

Discussion

The primary mission of the Marine Corps medium tactical wheeled fleet is logistical support. This fleet transports general cargo, personnel, ammunition, bulk fuel, water, shelters, and standard containers in addition to being the prime mover for Marine Corps artillery. The medium fleet's central logistical role and the expeditionary nature of the Marine Corps require mobile, yet self-sustaining, systems that can maintain full mission capabilities pending buildup of extensive combat service support ashore. The current medium fleet is approaching the end of its economic useful life and requires improvements to overcome deficiencies in off-road mobility, off-road speed, payload lift capacity (particularly for high density loads such as ammunition and bulk liquid), reliability, and maintainability.

The Medium Tactical Vehicle Remanufacturing (MTVR) Program is designed to correct these deficiencies by upgrading the current system through a remanufacturing process. Remanufacturing is preferred because it is more cost-effective than buying a new system. The program will integrate commercially available components into the current vehicle; e.g., electronically controlled powertrains and independent suspensions. The new vehicle will increase mobility (designed for 70 percent of operations off-road and 30 percent on-road), increase payload capacity to at least 7 tons off-road and 12 tons on-road, be capable of 30 mph sustained speed over rolling terrain, and be easier to operate and maintain. The increased payload ranges reflect realistic loads for bulk liquids and ammunition. The increased speed and mobility will allow operational forces greater flexibility to rearm, refuel, and resupply where it makes the most tactical sense and not where the current limited logistical train dictates. Independent suspension, robust powertrains, and other technical improvements, such as giving the driver the capability to adjust tire pressure from the cab and a greater capacity to absorb terrain induced shock and vibration have been incorporated. This improves reliability and maintainability and reduces driver stress and cargo damage, even at the higher speeds over rougher terrain.

Marine Corps Position

The MTVR will give the Marine Corps a fully mission-capable, robust vehicle to meet the demands of supporting Marine operational forces in increasingly difficult terrain. The MTVR program has validated the concept of integrating existing technology to improve mobility, payload, speed, reliability, and maintainability.

Standing Joint Task Force Headquarters

Discussion

The capability to dominate the battlespace requires the integration of the unique skills and abilities of each service. The focus of this integration takes place at the Joint Task Force Headquarters (JTF HQ). With few exceptions, JTF HQs are ad hoc organizations established for a specific mission to manage and control assigned forces. As demonstrated in our past JTF experiences, compressed operational timelines and limited resources create potential disadvantages. We understand the provisional nature of JTF HQs may adversely impact operational capability. The Marine Corps desires to eliminate confusion during the initial stand-up, enhance progress in the conduct of joint operations, and maximize the valuable training experience gained by applying lessons learned in our prior JTF HQ experiences.

The Marine Corps has experienced success in providing core capabilities for a JTF HQ for operations in Somalia and Guantanamo Bay, Cuba. In both cases, the headquarters was manned and equipped using MEF assets with augmentation from the joint community and other service components. Though operationally successful, these JTF HQs were also ad hoc organizations, and the tasking was in addition to other MEF mission requirements.

Recognizing the advantages of continuity to effectively integrate service capabilities, the Commandant of the Marine Corps directed the establishment of a standing JTF HQ. This JTF HQ will allow exploitation of the expeditionary character and combined arms experience of the Marine Corps for rapid deployment. It will be organized, trained, and equipped to respond to crises ranging from forward presence to conflict resolution.

In establishing the JTF HQ capability, the Marine Corps is working closely with the combatant commanders to coordinate training and to ensure the needs of those commanders are met. This effort will contribute to joint capabilities and enhance the Marine Corps overall warfighting capabilities.

Marine Corps Position

The Marine Corps will provide a fully capable, expeditionary, JTF HQ organized and equipped to move at a moment's notice to effectively meet a variety of contingencies. The objective is to provide a standing headquarters for the National Command Authority and the Unified CINCs to deploy in response to emerging crises anywhere in the world's littorals.

Operational Maneuver From The Sea

Discussion

The Marine Corps capstone operational concept of OMFTS was established in January 1996. OMFTS does more than describe how Marines will conduct power projection operations in the 21st century. It begins a process of proposal, debate, and experimentation building on the foundation laid by "... From the Sea" and "Forward ... From the Sea." It is a naval concept developed by the Marine Corps and executed in concert with the Navy. It places unprecedented emphasis on the littorals and demands greater cohesiveness between naval warfare and maneuver warfare.



OMFTS capitalizes on naval forces' ability to use the sea as a maneuver space. The intent in employing this concept is to achieve decisive objectives through ship-to-objective maneuver. A key concept in OMFTS is sea-basing of command and control, logistics, and the preponderance of fire support functions. Sea-based command and control assets greatly reduce the force's "footprint" ashore and its vulnerability. Reducing logistical requirements ashore and enhancing naval surface fire support will provide greater ground unit mobility. Sea-based fire support

will greatly enhance the effectiveness of ground-based fire support. Sea-based forces enable combat service support (CSS) forces to concentrate on providing support to warfighters without rear area security concerns inherent in shore-based logistics operations. Furthermore, the concept of sea-basing will provide the JTF commander with the capability to maneuver combat forces seamlessly from the sea to the decisive objective areas without the traditional impediment of securing the beach. Sea-basing thus allows putting the "teeth" ashore while leaving the logistics "tail" afloat, significantly leveraging land maneuver operations.

Three key platforms, each at the cutting edge of technology, are required to bring the OMFTS concept to fruition. They are the MV-22 Osprey, the Advanced Amphibious Assault Vehicle (AAAV), and the already operational Landing Craft Air Cushion (LCAC) vehicle. Continued development of these visionary enhancements opens a new window to power projection operations. They allow forward deployed forces to provide decisive responses to events requiring operations ranging from forward presence to conflict resolution.

Marine Corps Position

OMFTS is a marriage between maneuver warfare and naval warfare. Maneuver warfare provides an understanding of dynamic conflict and the requirement for skillful operations at a high tempo. Naval warfare demonstrates the advantages inherent in sea-borne movement and sea-based logistics. OMFTS requires overcoming challenges in battlefield mobility, intelligence, command and control, and sustainment. The Marine Corps will meet these challenges by coupling technology and new approaches in doctrine, organization, tactics, and training.

Commandant's Warfighting Laboratory

Discussion

The Commandant's Warfighting Laboratory (CWL), established in October 1995 at Quantico, Virginia, serves as the cradle and testbed for the development of enhanced operational concepts, tactics, techniques, and procedures, which will be progressively introduced into the FMF in concert with new technologies. The CWL is the integrating ground for new technologies, a focal point for warfighting refinements, and the critical engine to take the Marine Corps into the next century.



"Sea Dragon" is the Marine Corps name for the CWL's open process of exploitation and development of operational concepts. It derives from the oriental metaphor for successfully adapting to dynamic change. "Sea Dragon" is a process of concept development and experimentation that seeks to build on the existing strengths of the Navy-Marine Corps Team — merging Naval and Marine Forces within a joint warfighting

framework. The goal is to exploit innovative, and competitive advantages in future combat. The CWL has developed a Five Year Experimentation Plan (FYEP) that will serve as a guideline for planning and experimentation. The FYEP is divided into three Phases (Phase I - Hunter Warrior; Phase II - Urban Warrior; and Phase III - Capable Warrior).

The FYEP is ambitious, and is inextricably tied to the Navy. Its goal is to improve the capability of Navy and Marine Corps expeditionary forces across the spectrum of conflict. The FYEP is also supported by an Advance Concept Technology Demonstration (ACTD), "Extending the Littoral Battlespace," which focuses on command and control and fires and targeting. Further, it is designed to develop integrated systems to satisfy military demands using a combination of commercial off-the-shelf technology, leveraging other technology or ACTD programs, and by improving or augmenting existing systems.

In an attempt to capitalize on technological innovation, the CWL has strategically placed liaison officers with the Army and other DoD warfighting laboratories, institutions of higher education, and private industry. These liaison officers enable the CWL to interface and coordinate its experimental activities with these other institutions.

A Special Purpose Marine Air-Ground Task Force (Experimental) (SPMAGTF(X)) was established as the test organization for experimentation. The Command Element of this unit is stationed at Quantico and will use Fleet Marine Forces to round out the MAGTF major subordinate elements (MSEs) during the various experimental phases in support of the FYEP. Each phase will be comprised of a number of Limited Objective Experiments (LOEs) and an Advanced Warfighting Experiment (AWE).

Marine Corps Position

The Marine Corps will continue to aggressively examine its concepts and capabilities, and through experiments using innovative technologies, will remain a relevant force in the battlespace of the future. The CWL will ensure that the Marine Corps investment in experimentation, coupled with science and technology, permeates the Marine Corps doctrine, organization, education, and equipment, and influences the Nation's security policy.

Chemical/Biological Incident Response Force

Discussion

The 1995 subway incident in Tokyo, Iraq's possession of biological weapons, and the breakdown of controls on WMD in the former Soviet Union all indicate that the threat of biological or chemical terrorism has significantly increased. Because the use of chemical or biological agents by terrorists are potentially catastrophic, DoD efforts have focused on preventing such an incident. Limited national capabilities exist, however, to respond to such an event and to adequately manage the consequences.

The Commandant of the Marine Corps has publicly recognized this limited national capability. He directed that a Marine Corps Chemical/Biological Incident Response Force (CBIRF) be formed, manned, trained, and equipped to respond to chemical or biological terrorist incidents.

The concept for employment of the CBIRF details an initial, rapid response to chemical or biological incidents. When such an incident occurs, the CBIRF will deploy to the affected site. Once there, the CBIRF will provide a number of significant initial consequence management capabilities: assistance in coordinating initial relief efforts; security and isolation at the affected site (when authorized); detection, identification, and limited decontamination of personnel and equipment; expert medical advice and assistance; and service support assistance. Throughout its response, the CBIRF will be advised by civilian and government consultants in areas related to chemical or biological incidents.

When not training, exercising, or responding to an incident, CBIRF personnel will provide training to other DON organizations. In addition, the CBIRF will assist in the development of new doctrine, equipment, techniques, and procedures for responding to the use of chemical or biological agents. The CBIRF fills a capability gap within DoD and the Nation. It may offer a model for developing similar capabilities elsewhere.

As a national asset, the CBIRF was used at the 1996 Centennial Olympic Games in Atlanta and recently supported the 1997 Presidential Inauguration.

Marine Corps Position

DoD has a limited ability to respond effectively to a chemical or biological incident. The Marine Corps will contribute to the national response capability by creating a consequence management force package specifically designed to respond to a terrorist-initiated chemical or biological incident.

Non-Lethal Weapons

Discussion

The DoD has fielded, and is in the process of acquiring, a new class of systems called non-lethal weapons (NLWs). NLWs are weapons that are explicitly designed and primarily employed to achieve military objectives while minimizing human fatalities and damage to property and the environment. They typically employ new technologies to temporarily incapacitate personnel or material without causing permanent injuries or death, and without gross physical destruction. Examples of NLWs include infrasound, non-penetrating projectiles, entanglements, aqueous foam, and high-power microwaves.

NLWs reinforce deterrence and expand the range of options available to commanders. They enhance our capability to discourage, delay, or prevent hostile action; to limit escalation; and allow military action in situations where use of lethal force is not the preferred option. NLWs were deployed during the withdrawal of United Nations forces from Somalia, during the intervention in Haiti, and they are currently deployed in the former Yugoslavia. The systems deployed have included non-penetrating projectiles (rubber bullets, bean-bag rounds, and wooden baton rounds), flash-bang grenades, aqueous foam barriers, and sticky foam.

In March 1996, the Under Secretary of Defense (Acquisition and Technology) (USD (A&T)) appointed the Commandant of the Marine Corps to be the DoD's Executive Agent (EA) for NLWs. Leadership in this area transitioned from Office of the Secretary of Defense (OSD) to the joint and interagency Integrated Product Team (IPT) chaired by the Marine Corps. The EA/IPT continues to review and harmonize requirements, service funding, and program execution. The group has negotiated a Memorandum of Agreement (MOA) among all services and the U.S. Special Operations Command for effective management and coordination. The NLW Steering Committee supports the USD(A&T) in his oversight role of the EA/IPT by reviewing and assessing IPT proposals and providing recommendations.

Marine Corps Position

The Marine Corps believes that NLWs expand policy choices by providing a credible capability to use discriminate, measured force to influence pre-conflict, conflict, and post-conflict situations. NLWs potentially "buy time" in crises while other instruments (diplomatic, military, economic, law enforcement, etc.) are engaged. They provide decision-makers increased options for resolving complex problems involved in military and humanitarian operations.

Science and Technology

Discussion

The Marine Corps maintains a robust but focused Science and Technology (S&T) Program to assess and develop the entire spectrum of technologies that provide and enhance maneuver, firepower, C2, logistics, training, and education. An objective of the S&T program is to harness the technology needed to provide the FMF with the capabilities to perform those specified and implied missions assigned by law. The end product can then be successfully fielded to meet the requirements of the Combat Development System (CDS).

The process for determining the Marine Corps S&T Investment Strategy is integrated with the CDS. The objectives of the strategy are driven by the Expeditionary Warfare S&T Roundtable process. This process brings together in one forum the operational users and organizations that are vital to the development of technology. The end product of the Roundtable process is a collection of prioritized capability deficiencies and requirements.

The Marine Corps S&T program is composed of two elements, the Applied Research element and the Advanced Technology Development (ATD) element. The Applied Research element includes all efforts short of formal development programs. These efforts are directed toward the solution of specific military problems. Their objectives are to demonstrate feasibility, develop new technology needed for future systems, and enable improvements of existing systems to meet known and projected threats for the next decade. The ATD effort provides a process by which the products of research and development can be transitioned to useful applications. Additionally, the ATD process helps to define operational requirements; reduces risk; identifies options, costs, and worth; achieves user developer consensus; and defines operational utility. It also streamlines the Milestone I decision and, in some cases, may transition directly to a combined Milestone I/II decision. Both elements support the warfighting experimental process of the CWL.

Marine Corps Position

The Marine Corps will continue to conduct its roundtable to validate S&T requirements. This forum will identify technologies, integrate program feedback from the FMF, MCCDC, CWL, OPNAV, ONR, and HQMC and leverage on-going programs in other services and agencies. This will allow the Corps to apply scarce resources to either develop or adapt technologies, or do both, for the Marines of tomorrow.

Modeling and Simulation

Discussion

The Marine Corps is aggressively pursuing simulations, simulators, and advanced training devices and technologies to increase Marine Corps Total Force operational and training effectiveness.

The Marine Corps Modeling and Simulation (M&S) Master Plan provides the strategic direction for M&S in the form of end states to be achieved by the year 2010. The M&S investment strategy has surveyed the critical technologies and assessed priorities and timeframes. Based on the strategy outlined in these guidance documents, the Marine Corps has built a foundation for M&S through 2003.

To ensure our investment complements and builds upon DoD efforts, the Marine Corps is an active participant in Joint Staff and OSD development and implementation of M&S technologies and capabilities. Our investment strategy is founded upon the joint development effort being coordinated through the Defense Modeling and Simulation Office (DMSO).

The Marine Corps "Emerald Light" range instrumentation concept effort is an example of an M&S demonstration intended to provide the warfighter with a "hands-on" sampling of emerging technologies and capabilities being developed, and to better merge requirements with possible solutions.

Marine Corps Position

The Marine Corps is transitioning its training, operations, analysis, and acquisition technologies toward interoperability with the joint M&S environment. Implementation will require major service and DoD investment. A significant portion of our FY98 investment is being made toward the development of Marine Corps-unique capabilities within the Joint Simulation System (JSIMS) effort. Our continued confidence to invest in the JSIMS and other M&S efforts is ensured by joint development with DoD, industry, academia, and our allies.

Marine TACAIR

Discussion

The expeditionary character of Marine aviation gives it unique capabilities. It has been designed to operate effectively across the spectrum of basing options. While Marine squadrons mainly deploy from conventional airfields, such as during operations in the Persian Gulf and in the former Yugoslavia, they also have a long tradition of flying off aircraft carriers and amphibious ships as sea-based airpower. In the absence of adequate runways, the Marine expeditionary airfield system provides the capability to rapidly construct stand-alone airfields to support forward-based tactical air operations.

Historically, the flexibility of Marine tactical aviation (TACAIR) to integrate with and reinforce naval operations is well established. Marine squadrons deployed aboard aircraft carriers in World War II and the Korean War. During the Vietnam War, Marines flew from carrier decks and participated in operations such as *Linebacker II*. More recently, Marine squadrons took part in Operation *El Dorado Canyon*, the air operations against Libya, while assigned to the USS *Coral Sea*. To date, Marine squadrons, operating as part of Navy carrier air wings, have participated in such operations as *Southern Watch*, *Restore Hope*, *Deny Flight*, and *Deliberate Force*. Marine TACAIR squadrons not deployed with the Navy continue to operate as an integral part of the MAGTF.

Operationally, integration of active and reserve Marine aviation enhances the already formidable carrier air wing capabilities with highly effective close air support assets capable of expeditionary operations.

In August 1994, the Commandant and the Chief of Naval Operations agreed to place all DON TACAIR resources under central management for deployment scheduling. The MOA replaced a 1993 MOA which dedicated three strike fighter squadrons and one electronic warfare squadron to the active carrier wing pool. All Navy and Marine squadrons will now function under a standard criterion for personnel tempo (PERSTEMPO). Over a five-year period, no more than 50 percent of an aviator's tour can be away from his home base. However, to the maximum extent possible, Navy squadrons should be scheduled to satisfy Navy commitments and Marine Corps squadrons to satisfy Marine Corps commitments. Deploying Marine squadrons will report to designated air wings six to nine months in advance of a scheduled deployment, and remain with them until a month following the deployment. Similarly, Navy squadrons satisfying Marine Corps commitments will be available for training six to nine months prior to deployment.

Recent negotiations to update the MOA for fiscal years 1998 through 2000 require the Navy to provide twelve enlisted maintenance personnel for each integrating Marine F/A-18 squadron.



Marine Corps Position

Air support to the MAGTF commander remains the Marine Corps primary aviation concern. Units scheduled in support of MAGTF elements must be trained to a level of proficiency which satisfies the MAGTF commander. Each service brings unique capabilities to joint warfare that, when integrated under joint doctrine, improves service interoperability and overall warfighting effectiveness.

Marine Helicopter Recapitalization

Discussion

The Marine Corps has a long history of innovative solutions to warfighting requirements. In the past, when faced with the expense of replacing older aircraft such as the early versions of the AH-1, CH-46, and AV-8, the Marine Corps found affordable solutions by modernizing existing aircraft. This is the same approach being taken to upgrade the fleet of utility and attack helicopters.

On 28 August 1995, the Secretary of the Navy approved the Marine Corps program to upgrade both utility and attack helicopters. This program, known as the H-1 upgrade, recapitalizes the entire 280 aircraft fleet (100 UH-1N and 180 AH-1W). This is accomplished through the remanufacture of existing UH and AH airframes with the installation of a four-bladed rotor system, a newly developed drive train, and more powerful T700 engines. Improved cockpit integration and modern avionics systems will also enhance joint interoperability as both aircraft will be able to transmit and receive information from aircraft or ground units of the other services. In sum, this program incorporates all previously funded or planned modifications into one program, avoiding the cost of a "new start" replacement aircraft until a Joint Replacement Aircraft is fielded.

The H-1 upgrade program will dramatically increase the range, speed, payload, and lethality of the fleet while decreasing our logistic footprint. The utility variant will operate at nearly twice the current range with over double the payload. The attack variant will realize similar performance increases. However, it will also carry twice the current load of precision guided munitions with the addition of two ordnance stations. Both aircraft will achieve speeds of over 150 knots at most mission weights. Through use of the same major components, parts support for the fleet will be simplified, resulting in more space available on space-constrained amphibious and MPF ships and leaner logistic trains. Moreover, these improvements will make the Marine Corps attack and utility helicopter capabilities more compatible with the performance demands of OMFTS concepts.

Marine Corps Position

The H-1 upgrade program is an economical and comprehensive upgrade of both UH-1N and AH-1W helicopters that will resolve existing operational safety issues while significantly enhancing the capability and operational effectiveness of the attack and utility helicopter fleet. A key modernization effort, the H-1 upgrade will provide a bridge until the introduction of the Joint Replacement Aircraft in the 2020 time frame.

Joint Strike Fighter

Discussion

The Defense Department established the Joint Strike Fighter (JSF) program to develop technologies that would lead to the replacement of several different aircraft systems. The JSF program is intended to provide the next generation aircraft for the Marine Corps, Navy, Air Force, and the British Royal Navy. Specifically, the Marine Corps needs to replace the AV-8B and F/A-18C/D aircraft with a single Short Take-Off and Vertical Land (STOVL) platform. The Air Force needs a replacement for the F-16. The Navy is interested in obtaining a first day of the war, survivable aircraft to complement the F/A-18E/F. The Royal Navy is interested in replacing the Sea Harrier with a STOVL Fighter/Attack aircraft. Thus the JSF program strives to fulfill the needs of all three services, and the Royal Navy, through the concept of a family of operational aircraft. This approach will result in optimal commonality between variants and minimize aircraft life cycle cost. This family of JSF aircraft will include a STOVL variant (Marine Corps and Royal Navy), a Conventional Take-Off and Land (CTOL) variant (Air Force), and an Aircraft Carrier capable variant (Navy). The responsibility for meeting these service requirements with this next generation strike fighter rests within the JSF Program Office.

The Marine Corps requirements for this aircraft are focused on readiness, expeditionary capability, and the combined arms concept. The primary missions for the Marine Corps JSF will remain close air support, interdiction, and anti-air warfare. Secondary missions will include suppression of enemy air defenses, command and control of aircraft and missiles, and reconnaissance. The Marine STOVL version of the JSF must be lethal, responsive, flexible, and fit our neckdown strategy. The aircraft must be survivable and supportable, as well as light enough to meet our expeditionary needs. Furthermore, the next generation strike fighter must be affordable to ensure that sufficient numbers are available to maintain the character and capability of Marine Corps aviation.

Marine Corps Position

The JSF Program will provide the Marine Corps with a STOVL variant. This aircraft will solve our TACAIR age and attrition problems while meeting Marine aviation's goal to neckdown to a single type aircraft. Delivery of the JSF is scheduled to begin around 2007.

Marine Corps Readiness

Discussion

Preserving readiness in the current resource constrained environment requires maintaining a delicate balance between forces, necessary recapitalization, and realistic modernization programs. To this end, available funding must be carefully metered to cover all the accounts harboring recognized readiness indicators. This is a significant challenge and impacts all the services. The operating tempo of the last two years has strained two key areas — manpower and equipment. As operational employments exceed employment forecasts, greater resources must be devoted. For equipment this means greater expenditures on maintenance in the near-term coupled with a commitment to procure adequate replacements as hardware wears out. For manpower, it means ensuring adequate numbers to avoid excessive deployments on particular personnel, as well as adequate resources for family support. Maintaining force structure, facilities, and equipment into the 21st century in this austere fiscal environment will remain a significant challenge.

One aspect to maintaining a readiness balance is to measure and, to the extent possible, forecast future readiness. Efforts to improve readiness assessments continue and are based on patterns that further define and quantify military readiness indicators. This process involves combining objective standards-based measurements with commanders' subjective assessments regarding the ability of units and individuals to fight and win on today's battlefield. The Marine Corps is committed to developing measures to predict readiness. As a first step, we will use the newly fielded Marine Corps Training, Exercise Employment Plan (MCTEEP) as one additional readiness assessment tool. Currently implemented throughout the MARFORs, MCTEEP will show the impact of tempo on readiness. Future MCTEEP programs will support predictive readiness.

Marine Corps Position

Ensuring operational readiness is vital to the Marine Corps ability to accomplish its mission. Current funding is adequate to ensure a capable, ready, and relevant Marine Corps, but the balance of readiness is fragile. If projected budget levels continue, maintaining readiness will be at the expense of modernization, and future force capabilities will be at risk.

Recruiting

Discussion

The Marine Corps Total Force depends on the steady flow of new enlisted and officer accessions. During 1996, the Marine Corps won the battle in a difficult recruiting environment by achieving our recruiting goals in all categories.

The coming years will present the Marine Corps recruiting program with a continuing test. Among the services, recruiting quotas continue to slowly increase while the overall interest in enlisting remains low. These dynamics are further impacted by the market of recruitable 17 to 21 year-olds which remains one of the smallest in history. Unemployment is low and college enrollment continues to grow. Many schools are indifferent toward military recruiting and an array of sociological trends are making it more difficult to find well qualified applicants.

To ensure the necessary flow of quality recruits, we must maintain a solid team of recruiters. We must arm them with the support and resources required to accomplish their mission. In this regard, a variety of initiatives are underway to improve the quality of life of our recruiters comparable to that of the other services.

As we transition to the future and a more technologically advanced Corps, satisfying the demand for quality recruits will become critical. Quality recruits mean better performance, less attrition, and improved unit readiness. As a priority matter, the Marine Corps will maintain its standards despite the challenging trends.

In spite of the challenges, there is good reason for optimism. Recruiting difficulties have gained leadership and Congressional attention. Moreover, the size of the youth population has stabilized, and will begin to grow steadily, although slowly. Most importantly, the American people continue to value what the Marine Corps represents.

With the American people's support, through our enduring image, and by continuing to emphasize the unique attributes of being a Marine, the Marine Corps will continue to attract sufficient numbers of high quality, young Americans with the will to serve.

Marine Corps Position

The individual Marine is our most precious asset. There is no higher priority, therefore, than the successful recruitment of this Nation's finest young men and women. The Marine Corps remains committed to a strong and adequately resourced recruiting program.

Making Marines — Transformation

Discussion

The Marine Corps has strengthened the way it makes Marines to improve self-confidence, build strength of character, and instill a common set of positive values. The goal of the new program is not only to produce high quality Marines, capable of winning future battles, but also better Americans. The transformation of young civilian men and women into Marines involves mental, moral, and physical challenges. It comprises four phases: recruiting, recruit training, cohesion, and sustainment.

Initially, our recruiters begin the transformation process by maintaining our standards to recruit the highest quality men and women. The Delayed Entry Program allows recruiters to begin instilling a common set of values and standards in those recruits not yet prepared to begin recruit training.

Recruit training has been modified to increase the influence of the Drill Instructors, as well as the amount and quality of time they spend mentoring and setting the example for their recruits. Recruit training is a twelve week regimen for both male and female recruits that has been refined in terms of its length, content, and making of Marines. Core values acculturation has been dramatically enhanced and incorporated into daily instruction, discussion sessions, and training reinforcement critiques. The Recruit Training Program of Instruction — providing the Drill Instructor additional tools to transform America's young men and women into Marines — has been significantly realigned. This realignment consolidates Basic Warrior Training (BWT), previously conducted at recruit training, with Marine Combat Training (MCT) at the Schools of Infantry. This reorganization will improve combat skills instruction and training.

The culmination of recruit training is the "Crucible," a training regimen that is designed to reinforce our core values of honor, courage, and commitment and mark the moment of transformation from recruit to Marine. The "Crucible" event provides a defining moment to the recruit training experience. As a "rite of passage," the "Crucible" is a 54-hour field event that will test the mettle of every male and female recruit. There are physical and mental challenges that are enhanced by food and sleep deprivation. Throughout the "Crucible's" rapid-paced schedule, there is a continual emphasis on the importance of teamwork in overcoming adversity and adaptive problem solving. The "Crucible" has been developed around six major field events and augmented with eleven "Warrior Stations." The team, under the leadership of its Drill Instructor, passes the test together. The outcome is an experience that challenges every recruit, and results in a transformed American.

Unit cohesion is the third integral part of the transformation process. Coming out of the School of Infantry, newly forged Marines will be assigned into "teams" using a new assignment program called "Team Integrity." This program will build and maintain unified teams from the "Crucible" through initial training and to the FMF. Unit cohesion is designed to develop team integrity through assignment of recruits who will remain together throughout their first-term enlistment in order for members to bond and build confidence in one another. Achievement of this objective will require synchronization of team assignments with unit deployment cycles so that the teams spend as much time as possible with a battalion. Ideally, first-termers will spend their entire enlistment within one unit. The focus of initial efforts will be on the infantry career field, but ultimately this objective will be implemented throughout the Corps as much as possible.



The transformation process is sustained through reinforcing Core Values in the FMF and by holding Marines strictly accountable throughout their career. This new program will provide stronger, smarter, and more capable Marines who have the maturity and flexibility of mind and body to meet the challenges of the battlefield of the next century.

Marine Corps Position

The recruit training process has been strengthened to better prepare Marines for the challenges of the 21st century. The resulting "transformation" process will produce better trained Marines, with a stronger appreciation of Marine ethos. More cohesive units will increase our readiness posture and combat capabilities. The daily performance and conduct of our Marines will reflect the values of our Corps — Honor, Courage, and Commitment — and the ideals of the Nation it serves.

Marine Corps Total Force

Discussion

The success of the Marine Corps in war and in supporting national policy in peace is directly attributable to our commitment to our total force. Our Total Force Concept is a synergistic combination of active, reserve, and retired Marines, as well as our "civilian Marines."

The ability of the Marine Corps to meet the requirements of the National Military Strategy and to support CINC requirements for forward presence and peacetime engagement is directly related to the size of the Corps. In peacetime, our current structure allows us to meet our security commitments without resorting to unreasonable deployment tempo (DEPTEMPO). The reserves continue to play an increasing role in ensuring the active force maintains reasonable DEPTEMPO. Our ability to meet the Nation's wartime requirements is dependent on the combination of our active and reserve components. A force composed of 216,000 active and reserve Marines is the minimum strength needed to carry out all assigned missions.

Our reserve forces continue to play a vital role, even in peacetime. The Marine Corps continues to integrate both reserve component training and professional military education with that of the active component. In 1996, several thousand reserves made up the majority of the force used in Exercise ***Battle Griffin***. Reserves are also being used extensively to support developments at the Commandant's Warfighting Laboratory.

Our ability to call on a mobilization population of 25,000 retired Marines to fill more than 2,300 pre-assigned billets is included in all pre-mobilization and contingency planning. The experience, skills, and dedication to Corps and Country of these Marines is another valuable piece to our Total Force Concept.

In maintaining this force, we believe in having a Marine Corps that is relatively young and lean. The Marine Corps has 51 percent of its enlisted force in the highest six enlisted grades. This compares to 70 percent or higher for the other three services. In addition, our officer to enlisted ratio of 1 to 8.8 is by far the leanest of any of the services. These two factors provide for a significantly less expensive force, and allow our enlisted Marines to exercise more responsibility, initiative, and leadership. Having these attributes at all levels in the chain of command is vitally important.

Our 18,000 civilian employees are a crucial part of the total force. As with our officer to enlisted ratio, the Marine Corps has by far the leanest civilian population in DoD, with each civilian supporting 10 Marines. Our civilians are critical in providing unique skills required by the

supporting establishment and in providing essential continuity. This continuity is vital to ensure we retain corporate knowledge and avoid "reinventing the wheel."



Marine Corps Position

The Marine Corps is a fully integrated total force of active, reserve, and retired Marines, and "civilian Marines." The Corps has a tradition of "doing more with less" — we are doing so today. With that said, 174,000 active, 42,000 reserve, and 18,000 civilians are essential for the Marine Corps to execute its assigned responsibilities. Reduction of current strength without concomitant reduction in U.S. commitments will undermine force stability, foreign policy initiatives, and the Nation's ability to protect its national interests.

Quality of Life

Discussion

The Marine Corps is committed to efficient, effective and equitable management of quality of life programs. Quality of life in the Marine Corps is one of the Commandant's top programs and a priority for commanders at all levels. Taking care of our Marines and their families is a core tenet of what it means to be a Marine.

The Commandant has established the Marine Corps Quality of Life (QOL) Program priorities as: Compensation, Health Care, Housing, and Service Member, Family, and Community Support. These priorities are consistent with those of the DoD as a whole. In support of these priorities, the Marine Corps has almost doubled QOL funding from FY94 to FY96 and has programmed further increases in future years.

QOL programs impact readiness and operational responsiveness. As the Nation's force-in-readiness, maintaining the highest levels of operational readiness and responsiveness is paramount. Marines who know that they and their families are being taken care of are more likely to be focused on the job at hand — combat readiness. From a long-term perspective, QOL has a positive effect on retention and motivation to serve. For commanders, these programs provide additional resources allowing the commander to focus more closely on operational and leadership responsibilities.

The recently established Marine Corps QOL Master Plan outlines our vision for the future. This vision is an equitable level of quality of life for all Marines and their families regardless of where stationed, coupled with flexibility in execution. The Marine Corps QOL Working Group and Executive Committee ensure programs are properly coordinated and that the most efficient use of resources is made. Overall standards are developed, but commanders, with their knowledge of local situations and circumstances, are responsible for execution.

Marine Corps Position

The Marine Corps has made a significant commitment to improving QOL by application of resources and organization and command influence. With existing fiscal constraints, our focus is on using what we have programmed to maximum advantage.

Marine Corps Infrastructure

Discussion

The Marine Corps infrastructure consists of 16 major bases and stations in the United States and Japan. In keeping with our expeditionary nature, these installations are strategically located near air and sea ports of embarkation, and are serviced by major truck routes and railheads, to allow for the rapid and efficient movement of Marines and material.

Infrastructure development planning is designed to provide facilities for the efficient training of our air/ground combat teams while minimizing excess or redundant capacities. The obvious advantages to a lean infrastructure are efficiency and cost-effectiveness. Challenges arise in providing and maintaining infrastructure that can meet changing mission requirements in the face of increasing external pressures and declining fiscal and manpower resources. These challenges include:

❑ **Environmental Compliance.** We recognize that protection of the environment is a national priority and are aggressively pursuing environmental cleanup, compliance, pollution prevention, and conservation programs. Correcting past hazardous materials management practices and replacing an aging infrastructure to meet new compliance requirements are becoming increasingly difficult as fiscal resources decline. Pollution prevention and ecosystem management are two strategies being pursued to achieve economical and sustained environmental compliance.

❑ **Encroachment Control.** Once located in remote areas, many of our installations are now surrounded by urban, industrial, and mining development. This growth of the civil sector is often accompanied by pressure for access to our resources or demands to curtail our operations to make them more compatible with surrounding land uses. Additionally, regulatory requirements such as endangered species protection continue to erode unlimited access to areas needed for training. We maintain an aggressive encroachment control program, which has resulted in win-win solutions to meet these demands while not degrading the mission effectiveness of our installations. Encroachment takes many forms and requires constant vigilance to ensure the continued viability of our installations and access to our training ranges.

❑ **Recapitalization.** Marine Corps infrastructure investment totals more than \$25 billion. Routine maintenance and repair protects this investment through its life cycle, but eventually facilities must be recapitalized. Recapitalization of an infrastructure investment of this


magnitude once every 100 years would necessitate a Military Construction, Navy (MCON) funding stream of \$250 million annually. This is not achievable within current or projected budgets. To offset this deficit, we are aggressively pursuing several initiatives to downsize facilities at our bases and stations. By ensuring maximum use of the best infrastructure and demolishing the most energy and maintenance intensive facilities, we are reducing our inventory. In addition, we are examining the ways we do business to reduce the need for facilities to support the operating forces; such as, Prime Vendor Delivery of goods instead of maintaining a warehouse of material. We are looking to other services, agencies, and the commercial sector to provide needed facilities. Finally, we are using new legislative tools, which provide greater access to public/private ventures, to reduce our requirement for facilities.

❑ **Base Operating Support (BOS).** Military readiness requires an efficient and well-managed infrastructure with excellent facilities and high quality of life features. In addition to capital improvements, we must invest in their long term operation, maintenance, and repair. Failing to provide adequate resources will result in an eventual degradation of quality of life, operations, and mission accomplishment. Our limited funding for BOS must be balanced to keep the backlog of maintenance and repair from growing, comply with environmental requirements, and pay for required services. These are all costs of responsible ownership. We are working to meet these challenges through a variety of means, including technological and business process changes to increase productivity. We are also exploring new ways to outsource and finance facility requirements, but our BOS programs require continued visibility and support throughout the budget process.

❑ **Civilian Manpower.** Installation management requires a diverse staff possessing skills ranging from the electrical and plumbing trades to professionals trained in environmental science and law. We have actively pursued more efficient business practices, including outsourcing various functions and use of low maintenance technologies. This is evidenced by the fact the Marine Corps has the lowest ratio of civilian to military employees within DoD. We continue to examine this area for other efficiencies. Care must be exercised, however, to ensure that reducing civilian personnel does not impact our ability to provide a sufficiently skilled workforce to adequately maintain our infrastructure. Support at all levels is required as we analyze this invaluable asset.

❑ **Base Realignment and Closure.** The limited size and lack of redundancy within our supporting establishment are a two-edged sword. The efficiencies associated with a small physical plant strategically located

in support of our air/ground teams are truly beneficial. During this period of force and base structure reductions, however, finding the means to further reduce infrastructure capacity, while providing adequate facilities to meet the needs and maintain the integrity of our MAGTF organizations, is difficult. Decisions made during 1995 as part of the last round of base realignments and closures provided the infrastructure blueprint for the Marine Corps into the next century. Implementing these decisions is resulting in significant up-front costs to achieve long-term economies. New technologies such as simulation, changes in doctrine and training, a greater focus on jointness, and the fielding of new equipment necessitate our continual assessment of capacity requirements and resulting planning for change. Effecting these changes will require the continued commitment at all levels within the DoD and Congress.

 **Quality of Life.** We are a people-intensive service. A supporting establishment that helps attract and retain our outstanding Marines and Sailors requires a commitment to their quality of life by providing housing, recreational amenities, child care facilities, family services, community support centers, and more. We have significant shortages of adequate housing for both bachelor and married service members. Our Bachelor Housing Campaign Plan proposes aggressive strategies for building new barracks and quickly revitalizing barracks that should be retained. Our Family Housing Campaign Plan is a broad-based approach to maintaining, repairing and improving our core family housing inventory, and reducing housing deficits in high cost areas with traditional and creative financing mechanisms. In addition to housing, a commitment to excellent morale, welfare and recreation (MWR) programs will be instrumental in recruiting and retaining our Marines. We will maintain this commitment to quality of life infrastructure improvements through the collective leadership skills and managerial abilities resident in the operating forces and the supporting establishment. This commitment will result in improved readiness and ensure an excellent supporting establishment for future generations of Marines.

Marine Corps Position

The outstanding public support was based on an acknowledgment that we have a long range plan and specific goals to provide an economical infrastructure — one that minimizes redundancy, improves our training capabilities, yet provides the necessary quality of life features and environmental stewardship of our resources. Our planning objectives are manifested in our vision of an infrastructure unparalleled in capability and efficiency to support America's expeditionary force-in-readiness. With continued support from our Nation's leadership, our vision for the future will be realized.



Chapter Three

Current Operations

The United States Marine Corps is a unique American military organization. Frequently a CINC's force of choice in a crisis, Marine forces are forward-deployed and often in position as a crisis is unfolding. Additionally, they stand ready to deploy needed forces or reinforce with Maritime Prepositioning Forces (MPFs) quickly, effectively, and with sufficient flexibility to deal with diverse and sometimes multiple situations. In addition to the quick response capabilities of our forward-deployed Marine Expeditionary Units (MEUs) and MPFs, sea-based MEUs have the ability to operate without access to land bases providing a high degree of flexibility as to when, where, and what force to be employed. This tremendous capability is unique to the Navy-Marine Team. With the continued emphasis on joint and combined operations, the Navy-Marine Corps Team will play an increasingly vital role in our Nation's security and crisis-response capability.



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Current Operations

Throughout 1996 the Navy-Marine Corps team demonstrated its flexibility across the full spectrum of operations in support of U. S. theater commanders. Whether supporting implementation of the Dayton Peace Accords in Bosnia, enforcing the southern no-fly zone in Iraq, conducting non-combatant evacuations in Africa or supporting humanitarian/refugee efforts in Haiti and Turkey, the Navy-Marine Corps team has repeatedly demonstrated relevance in a dynamic world. Continually forward-deployed, supporting the combatant commanders presence requirements and ready to respond to crises, the Navy and Marine Corps have been fully engaged around the globe.

Exercises

Participation in realistic, worldwide exercises — whether service, joint, or combined — continues to be vital to ensuring the Marine Corps maintains a ready, relevant, and capable force. Service exercises such as Combined Arms Exercises (CAX) and exercises at our Mountain Warfare Training Center (MWTC) in Bridgeport, CA, develop and test individual and collective training as well as operational skills. Through joint and combined exercises, such as *Native Fury* (Qatar) and *Cobra Gold* (Thailand), the Marine Corps improves upon its ability to rapidly project forces globally, providing trained, interoperable forces to the combatant commanders.

During FY96, Marines participated in approximately 286 joint, combined, and service exercises. The exercises were categorized as live fire, field training, command post, or computer assisted exercises which vary in size from small unit to Marine Expeditionary Force (MEF). Through these exercises, our responsiveness and interoperability effectiveness is enhanced. They also provide a mechanism for gauging our operational readiness.

USMC Exercises During CY96:

<i>Type of Exercise</i>	<i>Number</i>
Joint	62
Combined	58
Service	165
Total	285

CY96 USMC Operations Matrix

DATE	OPERATIONS	FORCES	LOCATION
Jul 92 - Mar 96	PROVIDE PROMISE	Wasp, Guam, Saipan ARG: 22nd, 24th, 26th MEU(SOC)	Bosnia
Aug 92 - Present	SOUTHERN WATCH	2D and 3D MAW units	Arabian Gulf
Apr 93 - Dec 95	DENY FLIGHT transitioned to	2D MAW VMAQ & VMFA(AW) Squadrons	Bosnia
Dec 95 - Dec 96	DECISIVE EDGE transitioned to		
Dec 96 - Present	DELIBERATE GUARD		
Jun 92 - Dec 95	SHARP GUARD transitioned to	22d, 24th , 26th MEU(SOC)	Adriatic Sea
Dec 95 - Dec 96	DECISIVE ENGAGEMENT transitioned to		
Dec 96 - Present	DECISIVE ENDEAVOR		
May 94-Feb 96	SEA SIGNAL	II MEF units	Cuba
Mar 95-Apr 96	UNMIH	Globally sourced Marine linguist/staff personnel	Haiti
Oct 95-Present	FULL ACCOUNTING	Dets from 1st MAW	Southeast Asia
Aug 95- Present	VIGILANT SENTINEL	I MEF units, MPS-2	Southwest Asia
Dec 95- Dec 96	JOINT ENDEAVOR transitioned to	22d, 24th, 26th MEU(SOC), Marine Corps Security Forces,	Bosnia/ Herzegovina
Dec 96-Present	JOINT GUARD	I and II MEF UAV units	
Apr-Aug 96	ASSURED RESPONSE	22d MEU(SOC), SPMAGTF Liberia, II MEF units	Liberia
May-Aug 96	QUICK RESPONSE	22d MEU(SOC), SPMAGTF Liberia, II MEF units	Central African Republic
Jul 96-Present	NAVCENT Security Enhancement	Marine Corps Security Forces/FAST	Bahrain
Jul 96-Present	DESERT FOCUS	Det I MEF	Southwest Asia
Sep 96-Present	PACIFIC HAVEN	Det MARFORPAC, SPMAGTF from III MEF	Guam
Sep 96-Present	MARATHON (Marine participation ended on 19 Oct)	II MEF units, Marine Corps Security Forces	Bermuda, Cuba

Counterdrug Operations

The Marine Corps continued providing assistance to the counterdrug effort during 1996. Marines participated in 87 counterdrug (CD) missions along the U.S. Southwest border in support of Joint Task Force Six (JTF-6). Of these, 38 percent were completed by Marine Reservists from MARFORRES. Individual Marines and units assigned to these CD missions perform a supporting role to both local and federal law enforcement agencies who are responsible for making apprehensions and/or arrests of suspected drug traffickers.

Marine support missions have included: Listening and observation posts, small construction engineer projects, diver hull inspections, vehicle cargo inspections, linguist support, intelligence analyst support, ground base radar support, and aviation support.

The Marine Corps continues to be proactive in supporting the efforts of the Commander in Chief, U. S. Southern Command (USCINCSOUTH) to deny the exportation of illegal drugs into the U.S. from sources in Latin America. The Marine Corps provides Mobile Training Teams (MTTs), Extended Training Service Specialists (ETTSs), and Deployments for Training (DFT) that assist in the training of host nation military organizations and law enforcement agencies that have a CD mission. During 1996, the Marine Corps provided two Riverine Training Teams (RTT's) to Colombia to train host nation forces in riverine operations, and a ground-based radar detachment in Peru which provided vital regional radar coverage against airborne narcotics trafficking.

Military Support To Civil Authority

Increasingly, the DoD is called upon to support civil authorities during periods of domestic emergency. Marine Corps support to civil authorities highlights the mobility and capability of Marines to rapidly respond to the Nation's needs at home as well as overseas. This was demonstrated by I MEF providing 2d Battalion, 5th Marines, and an aviation detachment to support the National Interagency Firefighting Center's (NIFC) firefighting efforts in Oregon's Umatilla National Forest in September 1996. Further support was provided by CBIRF during July and August 1996. The CBIRF maintained close coordination with Atlanta emergency response forces, as well as federal agencies, to effectively mitigate the affects of a terrorist incident.





Chapter Four

Major Acquisition Programs

This chapter provides background information regarding key programs being pursued by the Marine Corps, or acquired by the Navy, to permit execution of the "Forward...From the Sea" naval warfare concept. These programs aggressively exploit technological advancements in order to improve readiness; enhance intelligence and information processing; increase the speed, mobility, and supporting firepower of expeditionary forces; and significantly minimize potential casualties during future operations. This chapter is divided into five parts. The first four parts correspond to programs integral to each of the major component elements of the MAGTF. The final part addresses general MAGTF support programs.



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Command Element Programs

The Command Element (CE), the MAGTF headquarters, is task organized to provide the command, control, communications, computers, intelligence, and interoperability (C4I2) necessary for effective planning and execution of Operational Maneuver from the Sea (OMFTS).

This section provides basic descriptions of Marine Corps C4I programs/systems which are under development or scheduled for procurement during FY97 and FY98. The system descriptions are organized according to the primary command and control (C2) functional area that they support:

Maneuver. Maneuver systems function to pull and fuse information from the other C2 functional areas. They provide the commander an integrated representation of the battlespace or area of concern.

Intelligence. Intelligence systems support the timely planning, collection, processing, production, and dissemination of all-source intelligence. In addition, these systems support the effective employment of reconnaissance, surveillance, and target acquisition resources.

Air Operations. Air operation systems are used to coordinate and plan Navy and Marine Corps air combat operations and interface with joint combined forces air operation systems. These systems also interface directly with the fire support systems.

Fire Support. Fire support systems integrate the artillery and air support within the MAGTF and naval gunfire for joint and combined fire support.

Combat Service Support. Combat service support systems ensure effective administrative and logistics planning and operations. This includes manpower management and all logistics functions that support deployment, employment, and reconstitution of forces.

Command and Control Warfare. Command and control warfare systems coordinate C2 and protection actions in support of C2 warfare operations.

MAGTF Command, Control, Communication, Computer, and Intelligence (C4I)

MAGTF C4I is the overall concept for the migration and integration of tactical data systems, communications systems, and information security systems in the Marine Corps. The goal of MAGTF C4I is to provide commanders a common tactical picture and the means to manage the complexity of the modern battlefield. MAGTF C4I will provide the ability to send, receive, process, filter, store, and display data to aid in tactical decision making. MAGTF C4I will employ the same types of common hardware and software whether ashore or afloat or while in garrison or in the field.

By capitalizing on the existing core services of the Unified Build (UB)/Defense Information Infrastructure (DII) Common Operating Environment (COE), the Marine Corps intends to re-engineer numerous systems across the mission areas of land operations, intelligence/dissemination, airspace management/air operations, fire support, combat service support, and tactical warfare simulation. The ongoing MAGTF C4I migration effort is consistent with and supportive of the Assistant Secretary of Defense (C3I) mandate to designate DoD standard migration systems. Individual systems will be merged so that information can be shared via MAGTF C4I. An additional goal is to reduce the acquisition schedule and cost of initiatives under MAGTF C4I.

The development plan for the MAGTF C4I envisions the creation of an integrated migration strategy which requires that the software functionality of migrating systems be incorporated into the MAGTF C4I software baseline (MSBL). Successive versions of the MSBL will provide increased functionality as the threat changes and doctrine and requirements evolve.

Global Command and Control System (GCCS)

DESCRIPTION

The GCCS is a flexible, evolutionary, interoperable joint C4I system which replaced the venerable Worldwide Military Command and Control System (WWMCCS) as the joint command and control system of record in August 1996. The current focus is on improving the functionality of the initial Joint Operational Planning and Execution System (JOPES) applications and on expanding GCCS with additional capabilities. These include: a Common Operational Picture (COP), intelligence functionality, Joint Task Force (JTF) requirements, and a Top Secret GCCS (GCCS-T). The Navy and Marine Corps focus will be to transition their service-specific C4I systems to a DII COE to bring GCCS functionality to the lowest common denominator — the warfighter. Ultimately, GCCS will connect joint and upper echelon service systems down to the battalion level and move information both vertically and horizontally.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity: (GCCS Suites)</i>	<i>7</i>	<i>0</i>
<i>(GCCS-T Suites)</i>	<i>21</i>	<i>0</i>

OPERATIONAL IMPACT

GCCS encompasses the policies, procedures, personnel, automated information processing systems, common communications paths, and common switches necessary to plan, deploy, sustain, and employ forces. GCCS provides joint operational planning and execution capabilities and facilitates for the deployment and redeployment of Marine Corps forces. GCCS and MAGTF C4I must be compatible.

PROGRAM STATUS

GCCS is a joint program with the Defense Information Systems Agency (DISA) as the lead agency. The Marine Corps procured an initial quantity of 63 SUN/SPARC 20 application servers for fielding to 29 Marine Corps Initial Operational Capability (IOC) sites. Procurement of equipment to support additional Marine Corps GCCS sites and to ensure a deployable GCCS capability will be completed by the 4th Quarter FY97.

DEVELOPER/MANUFACTURER

Software - DISA

Hardware - Commercial off-the-Shelf

MANEUVER

Tactical Combat Operations (TCO) System

DESCRIPTION

The TCO system, as an operations component of the MSBL, will automate the MAGTF's ability to receive, fuse, select, and display information from many sources, and disseminate selected information throughout the battlefield. TCO system attributes include automated message processing, mission planning, development and dissemination of operations orders and overlays, display of current friendly/enemy situations, display of tactical control measures, and interfaces with local and wide area networks (LANs/WANs). The Joint Maritime Command Information System, Unified Build (JMCIS UB) forms the core software for the TCO system, allowing the MAGTF to share battlefield information with the Navy and Coast Guard. The TCO system will transition to the DII COE in 1997, providing seamless interoperability with the GCCS and other DII COE compliant systems.

PROCUREMENT PROFILE:

Quantity:

FY97

230

FY98

180

OPERATIONAL IMPACT

The system will link the operations section of all MAGTF units of battalion/squadron size and larger. Marine forces embarked aboard Navy ships will "plug in" to the Naval Tactical Command System-Afloat. When ashore, MAGTF C4I will allow interoperability with joint forces over internal and external communications.



PROGRAM STATUS

Milestone III was approved in November 1995 and IOC was achieved in June 1996, with 334 systems fielded down to the regimental/group level. Full Operational Capability (FOC) should be accomplished by the end of FY98.

DEVELOPER/MANUFACTURER

Integration - Naval In-Service Engineering Activity (NISE), East Detachment, St. Inigoes, MD

Hardware - Hewlett Packard

Tactical Data Network (TDN) System

DESCRIPTION

The TDN system consists of a network of interconnected gateways and servers. These systems and their subscribers are connected by a combination of common-user, long-haul transmission systems, LANs, single channel radios, and the switched telephone network. The TDN system provides basic data transfer and switching services as well as access to strategic, supporting establishment, joint, and other service component tactical data networks. The TDN supports network management capabilities and value-added services such as message handling, directory services, file sharing, facsimile handling, and terminal emulation support. The TDN gateway deployed at the Marine Expeditionary Force (MEF) and other major subordinate commands will provide access to the Nonsecure Internet Protocol Router Network (NIPRNET), Secret Internet Protocol Router Network (SIPRNET), and other services' tactical packet switched networks. It will be configured in a High-Mobility, Multi-purpose Wheeled Vehicle (HMMWV)-mounted shelter for mobility. The TDN server deployed to the battalions will be in four manportable transit cases. The TDN will give MAGTF C4I users the ability to transition from AUTODIN to its mandated replacement system, the Defense Message System (DMS).

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity: (Gateways)</i>	<i>0</i>	<i>6</i>
<i>(Servers)</i>	<i>0</i>	<i>120</i>

OPERATIONAL IMPACT

The TDN augments the existing MAGTF communications infrastructure to provide an integrated data network for the MAGTF's tactical data systems.

PROGRAM STATUS

The program is in the Engineering and Manufacturing Development (EMD) phase. Milestone 0 was approved 11 July 1994 and Milestone I/II was approved 17 March 1995. A Milestone III decision is scheduled for 1st Quarter FY98.

DEVELOPER/MANUFACTURER

Prototypes - Tobyhanna Army Depot, PA
Production - TBD

Digital Technical Control (DTC)

DESCRIPTION

The DTC facilitates the installation, operation, restoration, and management of digital trunk groups consisting of multiplexed and individual circuits. It provides the primary interface between subscriber systems and LANs with the long-haul multi-channel transmission systems to transport voice, message, data, and imagery traffic. It can add, drop, and insert digital circuits into multiplexed groups; provide a source of stable timing to connected equipment or conditioned circuits; and perform analog/digital, 2-wire/4-wire, and signaling conversions. It contains the monitoring, testing, and patching equipment required by technical controllers to troubleshoot and restore faulty circuits and links.

PROCUREMENT PROFILE:	FY97	FY98
Quantity:	0	6

OPERATIONAL IMPACT

The DTC acts as a central management facility terminating most communication links and individual circuits for major commands and allows the MAGTF commander to install, operate, and maintain the supporting C4I system. The DTC, along with the Unit Level Circuit Switch, TDN, Tactical Communications Central, and various multi-channel radios, forms the backbone of the Marine Corps digital communication network. The DTC integrates the communications assets of a node into an efficient system that provides the commander seamless communications while making efficient use of limited bandwidth and equipment.



PROGRAM STATUS

The program is in the EMD phase. Milestone I/II occurred on 17 March 1995. Milestone III decision is anticipated in December 1997.

DEVELOPER/MANUFACTURER

EMD - Tobyhanna Army Depot, PA
Production - TBD

INTELLIGENCE

Intelligence Analysis System (IAS)

DESCRIPTION

The IAS will deploy either as a MEF IAS, in IAS suites, or as single IAS workstations. The MEF IAS serves as the hub of the Marine Air-Ground Intelligence System (MAGIS). It provides intelligence functionality to the echelon-tailored, MAGTF all-source intelligence fusion centers and is compatible with the DII COE. MEF IAS is a shelterized, mobile system with multiple analyst workstations in a client-server LAN configuration. IAS suites, for intermediate commands, are configured in either a two or a four workstation LAN. Single IAS workstations are for battalion and squadron-sized units.



PROCUREMENT PROFILE:

Quantity: MEF IAS
IAS Suites
IAS W/S

FY97

3
70
0

FY98

4
0
11

OPERATIONAL IMPACT

IAS hosts the Secondary Imagery Dissemination System (SIDS) and has provisions for communication links with other intelligence agencies and systems at the national, theater, and tactical levels.

PROGRAM STATUS

The commercial IAS suite reached IOC in 1992 with FOC completed in 1993. The follow-on IAS suite IOC was completed in the 1st Quarter FY97 with FOC scheduled for 2nd Quarter FY98. MEF IAS underwent operational testing in 1996. IOC is scheduled for 1998 with FOC in 1999. IAS workstations will start their Research and Development (R&D) phase in FY97 with IOC in FY98.

DEVELOPER/MANUFACTURER

MEF IAS - VITRO Corporation, Oxnard, CA
IAS suite - NSWC, Crane, IN
IAS workstation - TBD

MAGTF Secondary Imagery Dissemination System (SIDS)

DESCRIPTION

Using available communications paths, the MAGTF SIDS provides the capability to electronically collect, manipulate, transmit, and receive imagery products throughout the MAGTF, as well as to adjacent, higher, and external commands. MAGTF SIDS will fully comply with the National Imagery Transmission Format (NITF) Version 2.0 and the Tactical Communications Protocol (TACO II).

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity: (MAGTF SIDS)</i>	63	0

OPERATIONAL IMPACT

MAGTF SIDS will be hosted on the IAS and in a stand-alone configuration. Each configuration will be distributed throughout the MAGTF and will comprise the foundation of the SIDS network. Both allow the user to display, manipulate, annotate, print, transmit, and receive images on a multipurpose intelligence workstation.

PROGRAM STATUS

The IAS-hosted SIDS is presently operating on commercial IAS suites within the seven Marine Expeditionary Units (MEUs). Selection of imagery-quality scanners and printers is complete. The initial production decision of ten MAGTF SIDS is complete, and the systems have been purchased and integrated. A user evaluation, follow-on procurement decision, and IOC are scheduled for FY97 with FOC scheduled for FY98.

DEVELOPER/MANUFACTURER

IAS-hosted software - Paragon, Inc.

MAGTF SIDS-hosted software - Paragon, Inc.

MAGTF SIDS-hosted hardware - Kodak/Nikon

Marine Corps Common Hardware Suite (MCHS)



Technical Control And Analysis Center (TCAC) Product Improvement Program (PIP)

DESCRIPTION

The TCAC PIP consists of a lightweight, multipurpose, shelter mounted on a heavy variant of the HMMWV, three Sun/SPARC 20 client workstations, two Sun/SPARC 10 servers, associated peripherals, five radios (one High Frequency (HF), two Very High Frequency (VHF), one Ultra High Frequency (UHF), and one UHF satellite communications (SATCOM)), associated antennas, a Standard Integrated Command Post Shelter (SICPS) tent, and a trailer-mounted generator towed by the HMMWV. TCAC PIP functions include Signals Intelligence (SIGINT) data analysis, steerage and management of collection assets, production of SIGINT products, and data and voice communications connectivity to all levels, including national, higher, adjacent, and subordinate. The fielding requirement is for two systems at each of the two Radio Battalions.

PROCUREMENT PROFILE:

Quantity:

FY97

4

FY98

0

OPERATIONAL IMPACT

Compared to the current TCAC system, TCAC PIP will greatly increase the quality and timeliness of the SIGINT products provided to MAGTF commanders, while decreasing the amphibious/airlift requirements for system deployment.



PROGRAM STATUS

Prototype development began in FY91. Several prototype workstations provided since FY92 have successfully supported MEUs and detachments around the globe. The TCAC PIP successfully completed a Battle Lab Assessment test in September 1996. Additional testing is scheduled for FY97. TCAC PIP is scheduled for IOC in FY98 and FOC in FY99.

DEVELOPER/MANUFACTURER

VITRO; BTG, Inc.

Radio Reconnaissance Equipment Program-SIGINT Suite-1 (RREP-SS-1)

DESCRIPTION

RREP-SS-1 provides radio reconnaissance teams (RRTs) of the Fleet Marine Force (FMF) Radio Battalions with the only enhanced, man portable SIGINT system. The system consists of low-cost, Non-Developmental Item/Commercial-off-the-Shelf (NDI/COTS) hardware and software tailored to conduct signals search and exploitation missions in support of the MAGTF commander during the reconnaissance phase of an amphibious operation and special purpose missions. RREP-SS-1 enables RRTs to successfully prosecute the majority of low level, single channel, unencrypted tactical HF/VHF/UHF signals of interest. The system incorporates modularly-configured, ruggedized components that integrate the various operational requirements of a RRT. The RREP-SS-1 provides the RRT with the capability to conduct automated signals search/cataloging and radio direction finding, database storage and manipulation, limited analysis, Global Positioning System (GPS) interface, digital audio recording, digital database transfer, and reporting functions.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity: (RREP-SS-1)</i>	<i>18</i>	<i>0</i>

OPERATIONAL IMPACT

The RREP-SS-1 is the second suite of equipment developed under the RREP initiated in 1991. Maintaining the philosophy of “generational” fielding, RREP-SS-1 will, in the 1st Quarter FY98, replace the currently fielded system, the Radio Reconnaissance Distribution Device (R2D2). With increased capabilities over R2D2, RREP-SS-1 features a reduction in size, weight, cabling and power requirements. Its modular design features an “open systems architecture” that enables future technology upgrades without changing the basic operator mission profile.

PROGRAM STATUS

In June 1996, RREP-SS-1 received a Milestone III decision to procure and field 18 systems. IOC/FOC will be conducted simultaneously during the 1st Quarter FY98.

DEVELOPER/MANUFACTURER

The RREP is an on-going program. Both the Special Operations Forces Support Activity (SOFSA), Lexington, KY and VISICOM Laboratories, Pensacola, FL are involved with the production of RREP-SS-1, as well as the R&D efforts of the third generation suite of equipment, designated as RREP-SS-2 which will be fielded during the 1st Quarter FY01.

Mobile Electronic Warfare Support System (MEWSS) Product Improvement Program (PIP)

DESCRIPTION

The MEWSS PIP provides the FMF Radio Battalions with a state-of-the-art SIGINT/Electronic Warfare (EW) suite mounted in a highly mobile, robust, Light Armored Vehicle (LAV). The MEWSS PIP is a wide-band intercept system, providing a complete picture of the electronic order of battle to local and higher commanders. The system contains three primary mission subsystems incorporated into the Army's Intelligence/Electronic Warfare Common Sensor (IEWCS) program. The primary mission subsystems consist of a COMINT system which provides intercept, collection, and geolocation across a broad frequency range and a capability against a variety of modern threat communications emitters; an Electronic Intelligence (ELINT) system, which provides interception, identification, and geolocation of non-communications emitters including counter-battery and battlefield radar; and a precision location system to locate communication emitters to within targeting accuracy. The fielded MEWSS PIP system will include a state of the art electronic attack module capable of "smart" and conventional jamming.

PROCUREMENT PROFILE:	FY97	FY98
Quantity:	2	2

OPERATIONAL IMPACT

The fielded MEWSS vehicles support highly mobile Light Armored Reconnaissance (LAR) operations and provide SIGINT/EW support to a wide variety of missions. The current mission equipment is 1970's technology with no capability against modern threat emitters, no automated DF, and no ELINT capability. The MEWSS PIP will provide intercept, DF, jamming, and precision location against a wide array of modern modulation techniques, an expanded frequency range, and against non-communications signals. The MEWSS PIP, as a member of the IEWCS family, is completely interoperable with Army IEWCS platforms. This allows cooperative engagement, data sharing, and precision location capabilities.

PROGRAM STATUS

The current MEWSS PIP (IEWCS variant) prototype development began in FY93. The MEWSS PIP successfully completed an Operational Assessment in September 1996 at the Intelligence Electronic Warfare Test Directorate (IEWTD) in Ft Huachuca, AZ. A Low Rate Initial Production (LRIP) decision was made in December 1996 and Initial Operational Test and Evaluation (IOT&E) is scheduled for 4th Quarter FY97. This program

is a multi-service program, with the Army as the lead service. The Marine Corps acquisition strategy is to follow the Army's development and production efforts, taking full advantage of NDI/COTS opportunities, and combining test events and procurement quantities where possible. This strategy should result in significant cost savings for both services and ensures maximum possible interoperability between systems.



DEVELOPER/MANUFACTURER

Development: Raytheon E-Systems Communications Division,
Richardson, TX.

IEWCS production: Lockheed Martin Federal Systems, Owego, NY

Team Portable COMINT System (TPCS)

DESCRIPTION

The TPCS is a semi-automatic, man/team transportable communications intelligence system that provides intercept, collection, radio direction finding (DF), reporting, and collection management support to the MAGTF commander. The TPCS can be deployed by component, as a stand-alone system, or as a part of an integrated FMF Radio Battalion effort depending on the mission, MAGTF size, and hostile electronic environment. A complete TPCS consists of an analysis subsystem, a communications subsystem, and four collection/DF outstations, each formally designated as a Communications Intelligence (COMINT) collection subsystem outstation. The outstations are controlled by and report to the analysis subsystem via a radio frequency (RF) voice or data link. External communications to the supported MAGTF are via the communications subsystem.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	0	2

OPERATIONAL IMPACT

TPCS provides a previously unavailable semi-automated SIGINT exploitation capability to the FMF Radio Battalions. TPCS is more capable, flexible and supportable than other organic or COTS/ Government off-the-Shelf (GOTS) Radio Battalion collection equipment. The automation of the SIGINT process, combined with the increased receiver capabilities and data communications features of the TPCS, significantly improve the Radio Battalion's tactical SIGINT ability. The automated DF capability, which enables any forward deployed outstation to digitally task any DF set in the network, provides the Radio Battalions with the first true "netted" DF system. The scaleable architecture provides a variety of options for deploying the system. The system's evolutionary acquisition strategy will continue to increase the Radio Battalion's capability to exploit present and future technologies.

PROGRAM STATUS

TPCS was granted Milestone III in June 1993. With FY94 PMC funding, three TPCS systems were procured and fielded. In June 1996, eight TPCS systems were authorized for procurement. Six systems were procured in FY96. The remaining two systems will be procured in FY98.

DEVELOPER/MANUFACTURER

Harris Corporation, Melbourne, FL

Joint Service Imagery Processing System Tactical Exploitation Group (JSIPS TEG)

DESCRIPTION

The JSIPS TEG is a mobile, imagery ground station, packaged in three HMMWVs, that supports the MAGTF's tactical imagery exploitation needs. The JSIPS TEG provides the capability to receive, process, store, exploit and disseminate reports and secondary imagery derived from the Advanced Tactical Airborne Reconnaissance System (ATARS) electro-optical and infrared imagery from the F/A-18D(RC) as well as from theater and national sources such as U-2 aircraft and overhead imagery satellites. Imagery received from national sources must be in the NITF version 2.0. The TEG can deploy with any MAGTF to provide Imagery Intelligence (IMINT) for all aspects of operational planning.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	0	3

OPERATIONAL IMPACT

A JSIPS TEG will be fielded to each Force Imagery Interpretation Unit (FIIU) of the MEFs. When fully operational in conjunction with the JSIPS National System, it will provide the MAGTF or a Joint Task Force (JTF) with the capability to receive, process, and exploit secondary digital imagery from national or theater tactical imagery reconnaissance or secondary imagery systems. The TEG will provide the MAGTF with the capability to produce and disseminate imagery derived reports and limited types of digital imagery products.

PROGRAM STATUS

A prototype TEG delivered to the 2nd FIIU at Cherry Point, NC is undergoing a user evaluation. The data link segment is under development with an anticipated delivery of a prototype in December 1997. IOC is FY98 with FOC (to include the ATARS data link) scheduled for FY99.

DEVELOPER/MANUFACTURER

Prototype - COMTEC and Vitro, Inc.
Production - TBD

AIR OPERATIONS

Common Aviation Command And Control System (CAC2S)

DESCRIPTION

The CAC2S is a coordinated modernization effort to replace the existing C2 equipment of the Marine Air Command and Control System (MACCS) and provide the Aviation Combat Element (ACE) commander with the necessary hardware, software, equipment, and facilities to effectively command, control, and coordinate air operations. The CAC2S system will support the MACCS missions with a suite of operationally scaleable modules. The CAC2S integrates the functions of aviation C2 into an interoperable naval system which supports OMFTS. The components of the CAC2S are specifically designed to be operated in an expeditionary mode, thereby providing the equipment to support any operational contingency.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	0	0

OPERATIONAL IMPACT

The CAC2S, in conjunction with its organic sensors and weapons systems, supports OMFTS and brings Marine aviation C2 fully on-line with other joint C2 systems. The system will replace C2 systems in the following Marine aviation C2 elements:

- ☐ Tactical Air Command Center (TACC)
- ☐ Tactical Air Operations Center (TAOC)
- ☐ Direct Air Support Center (DASC)
- ☐ Marine Air Traffic Control Detachment (MATC Det)
- ☐ Low Altitude Air Defense Battalion (LAAD Bn)
- ☐ Marine Air Control Squadron (MACS) Theater Missile Defense (TMD)

PROGRAM STATUS

The CAC2S is currently in Phase 0, Concept Exploration. The Mission Need Statement (MNS) was signed in April 1995. An Analysis of Alternatives is being conducted.

DEVELOPER/MANUFACTURER

TBD

Air Defense Communications Platform (ADCP)

DESCRIPTION

The ADCP will receive, transmit, process, and distribute data link and voice information to MAGTF ground-based air defense units.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	0	8

OPERATIONAL IMPACT

The fielding of the ADCP enhances the MAGTF commander's ability to effectively deploy air defense assets. The single configuration HMMWV-based system meets the requirements for receiving and broadcasting air picture data for Short Range Air Defense (SHORAD) cueing while providing HAWK units a capability for Tactical Ballistic Missile Defense (TBMD).

PROGRAM STATUS

Milestone I/II completed during 2nd Quarter FY95. Milestone III is scheduled for April 1997 with IOC scheduled for 1st Quarter FY98.

DEVELOPER/MANUFACTURER

- Software - Advanced Programming Concepts
- Hardware and Integration - Naval Surface Warfare Center, Crane, IN



Improved Direct Air Support Central (IDASC) Product Improvement Program (PIP)

DESCRIPTION

The IDASC PIP will replace the AN/TSQ-155 IDASC and OE-334/TRC Antenna Coupler Group presently fielded in the Marine Air Support Squadrons with a High Mobility Downsized (HMD) DASC. The HMD DASC consists of five identical hardware-configurable, HMMWV-mounted Lightweight Multipurpose Shelters (LMS) and associated support equipment, e.g., Environmental Control Units, generators. Each shelter contains components of an internal distributed digital network that interconnects with other HMD DASC shelters or allows single communications components to be added for a modular increase in communications capabilities.



The shelters are configured in one of two principle variants. The operations variant provides the operator, via a Command, Control Communications and Distribution System (C3DS), with access to radio and telephone communications circuits, components required for tactical automation capability, and miscellaneous components to provide other operational capabilities. The communications variant is selectively populated with radio, cryptographic, and components necessary to interface the MAGTF with joint level communications agencies required for the accomplishment of the DASC mission.

Each HMD DASC vehicle tows an M-116 trailer that carries a generator and external cables. The trailer towed by the operations variant also carries one Quick Erect Shelter. Given the same form-fit of the shelters, coupled with an ability to populate the internal equipment

differently, the modular integration capability provides a wide range of tactical configurations.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	<i>12</i>	<i>0</i>

OPERATIONAL IMPACT

The system design allows for increased configuration and employment flexibility at any level of MAGTF operations and provides the operating forces with a lightweight, highly mobile, shelterized system capable of delivering flexible and responsive air support C2.

PROGRAM STATUS

The program is being implemented via a three phase evolutionary acquisition strategy:

Phase I (IOC) – Downsizing, Electromechanical Upgrades, and Automation Core;

Phase II (FOC) – Block Upgrades;

Phase III – Outyear Improvements. IOC is scheduled for 1st Quarter FY98, and FOC in 3rd Quarter FY98.

DEVELOPER/MANUFACTURER

Naval Surface Warfare Center, Crane, IN (Shelter Downsizing, System Integrator)

Tactical Air Operations Center (TAOC)

DESCRIPTION

The TAOC consists of the AN/TYQ-23(V)1 Tactical Air Operations Module (TAOM), AN/TPS-59 and AN/TPS-63 radars, the Joint Tactical Information Distribution System (JTIDS), and the Sector Anti-Air Warfare Facility (SAAWF). The TAOC provides the equipment and organization necessary to plan, direct, and control tactical air operations, and to perform specified airspace management tasks.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity: OCU</i>	<i>1</i>	<i>28</i>
<i>JTIDS</i>	<i>2</i>	<i>9</i>
<i>TPS-59</i>	<i>9</i>	<i>0</i>

OPERATIONAL IMPACT

The Operator Console Upgrade (OCU) replaces the existing console and provides a commercial network interface to external networks. The OCU introduces GCCS functionality and a Windows-based man-to-machine interface. JTIDS implementation provides a robust capability with the objective of commonality with the TACC. The TPS-59 radar upgrade will provide a three dimensional area defense against tactical ballistic missiles by early detection and engagement by the HAWK and other theater missile defense systems. The interim SAAWF facilitates dissemination of the tactical air picture from the TAOM to the Sector Anti-Air Warfare Coordinator (SAAWC) Battle Staff operator positions. It also facilitates an automatic interface between the Contingency Theater Automated Planning System (CTAPS) and the TAOM database for the air tasking order.

PROGRAM STATUS

During 2nd Quarter FY96, the contract for the OCU, an Acquisition Category IV(T) Minor Upgrade, was awarded; JTIDS implementation began EMD phase; and the AN/TPS-59 upgrade began. The interim SAAWF began in November 1995. The final SAAWF configuration is in the EMD phase under a joint Air Force/Marine Corps initiative. Preliminary design was reviewed and approved in September 1995. The program is named Combat Integration Capability (CIC)/SAAWF. The Marine Corps will receive prototype CIC/SAAWF software during 2nd Quarter FY97 for evaluation.

DEVELOPER/MANUFACTURER

OCU - Litton Data Systems
AN-TYQ-JTIDS - Litton Data Systems
AN/TPS-59 Interface - Litton Data Systems
Interim SAAWF - MCTSSA/MCHS
Final SAAWF Prototype - Space Warfare Center, CO

FIRE SUPPORT

Advanced Field Artillery Tactical Data System (AFATDS)

DESCRIPTION

The AFATDS is a joint Army/Marine Corps program to replace the Initial Fire Support Automated System (IFSAS). It employs a building block approach to incrementally incorporate automation into fire support functionality. As a multi-service, integrated, battlefield management and decision support system, it assists the commander in the planning, delivery, and coordination of supporting arms. AFATDS satisfies the fire support command and control requirements of the Marine Corps. All echelons of the MAGTF will receive the AFATDS and it will be employed from the AAVC-7, LAV-C2 and AAV.

PROCUREMENT PROFILE:

Quantity:

FY97

0

FY98

0

OPERATIONAL IMPACT

AFATDS will provide a MAGTF commander with the capability to rapidly integrate ground, air, and naval surface fire support into the scheme of maneuver. The AFATDS software architecture is interoperable with Marine Corps communications, MAGTF C4I baseline systems, and the GCCS COE.

PROGRAM STATUS

The Army, the lead service on this ACAT I program, made a favorable Milestone III decision in December 1995. Army fielding efforts began in FY97 and will continue through FY07. The Marine Corps chose to wait on a subsequent version of AFATDS software that would include more air and naval surface fire support functionality. The Marine Corps established an AFATDS testbed in October 1996 at I MEF, Camp Pendleton, CA. The Marine Corps will participate in a multi-service Limited User Test (LUT) at Ft. Sill, OK during the 4th Quarter FY97 to evaluate the 1997 release of AFATDS software. The Marine Corps will make a production/procurement decision on the 1997 AFATDS software and the Army's CHS-2 hardware suite in March 1998. The IOC is scheduled for FY99 and FOC in FY02.

DEVELOPER/MANUFACTURER

Software - Hughes Defense Communications

Hardware - Army contracted with GTE and SUN

Marine Corps is pursuing other commercial sources to meet its mobility and flexibility needs.

COMMUNICATION AND COMMUNICATIONS SUPPORT

Single Channel Ground and Airborne Radio System (SINCGARS)

DESCRIPTION

SINCGARS is a family of lightweight combat radios. SINCGARS is the standard VHF-Frequency Modulated (FM) tactical radio for the Marine Corps, providing the backbone of the single channel radio nets used by all C2 and fire support systems. User-selectable operational modes, variable power output, and frequency hopping will provide enhanced security against surveillance and jamming. It is capable of voice and data transmission over the VHF-FM frequency range of 30-87.975 MHz.

PROCUREMENT PROFILE:

FY97

FY98

Quantity:

3,026

0

OPERATIONAL IMPACT

SINCGARS provides the MAGTF commander with the primary means of communications to support C2 on the battlefield.

PROGRAM STATUS

IOC occurred during 4th Quarter FY94.

DEVELOPER/MANUFACTURER

ITT Aerospace/Communications Division



Data Automated Communications Terminal (DACT)

DESCRIPTION

The DACT is a tactical input/output battlefield situational awareness system and communications terminal, which provides seamless digitized capability to echelons below the battalion level within the Marine Corps. It is used for both foot-mobile and vehicular-mounted applications. The DACT integrates information from the six C2 functional areas. It is used to receive, store, retrieve, create, modify, transmit, and display map overlays, operational messages/reports, and position information via MAGTF C4I tactical radios and data systems, networks, and wire lines. The DACT is a palmtop computer with an internal GPS and Marine Corps developed software. It weighs less than 7 pounds.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	<i>50</i>	<i>493</i>

OPERATIONAL IMPACT

The DACT will link battalion and larger sized units employing MAGTF C4I digital systems to smaller maneuver elements. Specific system features provide enhanced capabilities far beyond any system previously fielded to small units. The internal GPS provides position location information directly plotted on a digital map display. The touch screen with passive pen entry device allows the user to free form draw overlays directly onto the screen and automatically transmit this information to other stations on the radio net. The internal dual channel modem allows one DACT to be connected to two radio nets so that mid-level units, such as a company, can receive information from subordinates and transmit that information to higher headquarters using the same DACT device. Pre-formatted messages allow users to quickly compose and transmit information to other units.

PROGRAM STATUS

The program is in the EMD phase. Software development is being conducted on prototype units. Hardware source selection will be completed during 1997. Milestone I/II was approved in November 1995.

DEVELOPER/MANUFACTURER

Production - TBD

Super High Frequency (SHF) Tri-Band Advanced Range Extension-Terminal (STAR-T)

DESCRIPTION

The STAR-T satisfies the Marine Corps requirement for SHF tactical SATCOM terminals. It is a HMMWV-mounted, multi-channel tri-band SATCOM terminal. The STAR-T will replace the currently fielded Ground Mobile Forces (GMF) SATCOM terminals. It brings to the battlefield an increased channel bandwidth capability and greater operational flexibility. The STAR-T supports the equivalent of four 1.544 Mbps circuits. It can communicate with the Defense Satellite Communications System (DSCS) and with commercial satellite systems. It will provide communications planners more options to support the MAGTF commander.

PROCUREMENT PROFILE:

FY97

FY98

Quantity:

0

0

OPERATIONAL IMPACT

Currently, the deployed GMF multi-channel SATCOM terminals do not have the bandwidth to meet the MAGTF commander's requirement for increasing quantities of information. Fielding of the STAR-T terminal will help alleviate the burden on today's communication systems.

PROGRAM STATUS

STAR-T is in Phase 0, Concept Exploration, with a Milestone I/IIIA decision in May 1997.

DEVELOPER/MANUFACTURER

MARCORSYSCOM/Raytheon Corporation

Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T)

DESCRIPTION

The SMART-T is a transportable, heavy HMMWV-mounted, tactical SATCOM terminal that operates with Military Strategic and Tactical Relay (MILSTAR)-compatible communication payloads. The SMART-T transmits an extremely high frequency (EHF) uplink signal and receives a super high frequency (SHF) downlink signal to provide robust, low probability of intercept, jam resistant communications. SMART-T provides medium and low data rate communications simultaneously.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	<i>0</i>	<i>0</i>

OPERATIONAL IMPACT

The SMART-T aligns the Marine Corps with the Joint Staff's Military SATCOM architecture in the EHF spectrum and provides MAGTF elements with multi-channel, internal and external, long-haul, critical command and control communications. The SMART-T meets the joint requirement for a data/voice SATCOM system that provides secure, mobile, worldwide, anti-jam, reliable, low probability of intercept, tactical SATCOM that are not subject to terrain masking or distance limitations.

PROGRAM STATUS

Contract was awarded in February 1996. LRIP for the Army commenced in 3rd Quarter FY96. Full scale production will commence in 1st Quarter FY99. IOC for the Marine Corps is 1st Quarter FY01 with FOC in FY01.

DEVELOPER/MANUFACTURER

Raytheon Electronic Systems, Marlborough, MA

Ground Combat Element Programs

The Ground Combat Element (GCE) is task-organized around an infantry unit that varies in size from a reinforced battalion to one or more reinforced divisions. Its purpose is to close with and defeat an enemy through the application of superior combat power at the decisive time and place. This is accomplished by rapid, uninterrupted maneuver ashore from amphibious ships to gain positional advantage and by precise, overwhelming application of firepower. The following programs will enable GCE forces to execute OMFTS by greatly increasing their mobility, survivability, and accuracy of fires.

Mobility

Advanced Amphibious Assault Vehicle (AAAV) Program

DESCRIPTION

The AAAV Program will provide the Marine Corps a weapons system fully capable of implementing ship-to-objective maneuver. The AAAV will join the MV-22 and LCAC as an integral component of the amphibious triad required to execute the concept of OMFTS. Battlespace dominance by Marine forces will be significantly enhanced as a result of the AAAV's high water speed and superior land mobility which have historically limited the rapid maneuver of armored combat vehicles. The AAAV's unique combination of offensive firepower, armor and Nuclear, Biological, and Chemical (NBC) collective protection, and high-speed mobility on land and sea represent major breakthroughs in the ability of naval expeditionary forces to avoid an enemy's strengths and exploit its weaknesses.

PROCUREMENT PROFILE:

Quantity:

FY97

0

FY98

0

OPERATIONAL IMPACT

The AAAV will allow immediate, high-speed maneuver of Marine infantry units as they emerge from ships located over the visual horizon — 25 miles and beyond. Projection of these forces will be conducted as a single, seamless stroke that capitalizes on the intervening sea and land terrain to achieve surprise and rapidly exploit weak points in the enemy's littoral defenses.



PROGRAM STATUS

The AAV Program was approved by the Defense Acquisition Board (DAB), which conducted a Milestone I review in March 1995 signifying the beginning of the Program Definition and Risk Reduction (PDRR) phase. In June 1996, General Dynamics Land Systems was awarded the PDRR Phase contract. Execution of the contract began at the AAV Technology Center located in Woodbridge, VA. This facility houses the AAV Program Office, General Dynamics and their subcontractors, and representatives from MARCORSYSCOM and the Defense Contract Management Command.

DEVELOPER/MANUFACTURER

General Dynamics Amphibious Systems

Explosive Stand-Off Minefield Breacher (ESMB)

DESCRIPTION

The ESMB is a joint Army/Marine Corps program with the Army as the lead service. The ESMB neutralizes blast-hardened and complex-fuzed mines and unexploded munitions that reduce the effectiveness of current minefield breaching systems. The ESMB is a trailer-mounted, rocket-launched, net array system with 20,000 individual shape charges that create a 5 by 145 meter lane through a minefield.

PROCUREMENT PROFILE:

FY97

FY98

Quantity:

0

0

OPERATIONAL IMPACT

ESMB will significantly improve the Marine Corps stand-off lane breaching capability. ESMB gives the operational commander the ability to defeat hardened surface laid and buried mines and unexploded ordnance in the breach lane. As a trailer-mounted system, towed by either the M1A1 Main Battle Tank or Amphibious Assault Vehicle (AAV), it provides a capability that can maneuver with the assault forces.

PROGRAM STATUS

ESMB is currently in the PDRR phase with a scheduled Milestone II in August 1997.

DEVELOPER/MANUFACTURER

TRACOR Aerospace Inc., Austin, TX

Armored Vehicle Driver's Thermal Viewer (AVDTV)

DESCRIPTION

The AVDTV is a replacement for a driver's current passive image intensification (I2) sights. It will allow the driver to have day and night vision that will penetrate battlefield obscurants. In addition to enhancing the driver's vision, it also provides eye protection against battlefield laser devices since it is not a direct optic viewer. A total of 2,645 units in various configurations are required to support the M1A1, AAV and LAV families of vehicles.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	0	0

OPERATIONAL IMPACT

The need to enhance vehicle drivers' sights surfaced as a top priority after the conflict in Southwest Asia. The fog, smoke, and dust found in this environment seriously impaired daylight visibility and intense darkness rendered the I2 night sights almost useless. The I2 sights were also prone to "washout" when conducting road marches near vehicles using headlights or in the vicinity of oil fires. Vehicle commanders with thermal sights often had to use their primary weapon sights to assist the driver in maneuvering their vehicle. The AVDTV will overcome many of the drawbacks encountered with the current sights.

PROGRAM STATUS

The Army is the lead service for this program. A Milestone III decision is expected in April 1997 with the resolution of an omnibus contract like that used for other night vision equipment. Initial procurement funding is in FY99 with fielding to support IOC in FY00 and FOC in FY04.

DEVELOPER/MANUFACTURER

TBD

Combat Breacher Vehicle (CBV)

DESCRIPTION

The CBV, also known as the Grizzly, incorporates countermine and counterobstacle capabilities into a single survivable system. It creates a lane for itself and other vehicles of the combat force to follow. The system breaches natural (streams, dry gaps, and tree falls), simple (wire, craters, berms, abatis, rubble, log cribs, and minefields), and complex (combination of natural and simple) obstacles.

The CBV is a full-tracked, heavily protected system that integrates the M1 Tank chassis technologies with the CBV's unique mission modules. These include a full width mine clearing blade with automatic depth control, a power-driven excavating arm, and a weapons station.

PROCUREMENT PROFILE:

FY97

FY98

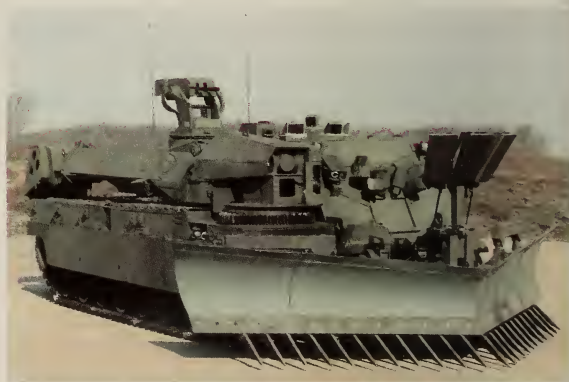
Quantity:

0

0

OPERATIONAL IMPACT

The CBV will be part of the combined arms force that will be employed as part of a synchronized combat operation to breach obstacles. Direct and indirect fires will suppress enemy actions while the CBV moves forward to construct lanes through linear obstacle belts that will permit follow-on forces to conduct their mission.



PROGRAM STATUS

CBV is a joint program with the Army as the lead service. The Army successfully completed the Milestone II in December 1996. A Milestone III decision is tentatively scheduled for FY01 with IOC in FY04. The Marine Corps is in the process of seeking approval to adopt the Army's Operational Requirement Document (ORD).

DEVELOPER/MANUFACTURER

United Defense, Limited Partnership

Firepower

Lightweight 155mm Howitzer (LW155)

DESCRIPTION

The LW155 howitzer will provide the MAGTF with an enhanced organic fire support capability. The LW155 retains the current M198 howitzer's range yet will weight 7,000 pounds less. This reduction in weight will give the LW155 significantly improved transportability and mobility by sea, air, and land platforms. Capable of being transported by the medium lift MV-22 Osprey aircraft, the LW155 is designed for expeditionary contingencies requiring light, highly mobile artillery.

PROCUREMENT PROFILE:

Quantity:

FY97

0

FY98

0

OPERATIONAL IMPACT

The LW155 will give the MAGTF commander greater operational and tactical flexibility in executing his mission. The increased mobility of the LW155 will significantly improve artillery ship-to-shore and across-the-beach movement while increasing the survivability, responsiveness, lethality, and efficiency of artillery units supporting OMFTS.

PROGRAM STATUS

The LW155 is currently in the EMD phase. Testing and competitive selection of a single howitzer candidate will be completed by March 1997 with the award of an initial contract. LW155 is a joint Marine Corps/Army program with the Marine Corps as the lead service.

DEVELOPER/MANUFACTURER

The Marine Corps is the lead developer and will manage the overall effort. This joint program is executed by a Marine Corps Program Manager working for the Army's Program Executive Officer for Ground Combat Support Systems, who also serves as the Marine Corps executive agent.

Javelin

DESCRIPTION

The Javelin, formerly known as the AAWS-M, is a medium-range, manportable, “*fire-and-forget*” weapon system that will replace the Dragon anti-armor missile system currently deployed with infantry battalions. Javelin will satisfy an operational requirement to provide increased mobility, reliability, higher hit/kill probability, and greater effective range (2,000m+) against current and future armored threats. Javelin uses an infrared, fire-and-forget seeker, coupled with an advanced warhead and a top-down attack missile trajectory to provide its lethality. It can be fired from inside buildings and enclosures, which makes it an effective system for employment in urban terrain, as well as in open areas.

PROCUREMENT PROFILE:

*Quantity: Command Launch Unit
Missiles*

FY97

*48
141*

FY98

*140
194*

OPERATIONAL IMPACT

The Marine Corps has a continuing requirement for a manportable, anti-armor weapon system capable of engaging and defeating any armor threat. Javelin will replace the Dragon medium antitank weapon system, which is ineffective against the improved conventional and explosive reactive armor on existing threat vehicles.

PROGRAM STATUS

The Army and the Marine Corps are jointly participating in the development of the Javelin, with the Army as lead service. Marine IOC is anticipated during FY99.



DEVELOPER/MANUFACTURER

Texas Instruments and Lockheed Martin (Joint Venture)

Predator

DESCRIPTION

The Predator, formerly known as the SRAW, is a short-range assault missile with a fly-over, shoot-down attack profile, similar to that of the TOW-IIB. The warhead uses an explosively-formed penetrator and is lethal against all current main battle tanks including those equipped with explosive reactive armor. As a fire-and-forget, 20-pound weapon with a disposable launcher, Predator has an effective range between 17 and 600 meters and has an inertial-guided autopilot to increase its accuracy. The inertial autopilot determines range and lead prior to missile launch. The flight module increases the gunner’s survivability with its soft launch capability. This capability also allows the weapon to be fired from enclosed spaces.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	0	0

OPERATIONAL IMPACT

Predator will provide infantry units with a weapon that will satisfy both the current and future needs for a lightweight anti-armor weapon with lethality against main battle tanks. Predator is designed to satisfy the light antitank weapon requirement and to complement the fielding of the Javelin medium antitank weapon in the anti-armor platoon of the infantry battalion.

PROGRAM STATUS

Predator is in the third year of an EMD phase which is scheduled for completion in FY98. Engineering model flights completed in FY96 demonstrated design maturity and system performance. Developmental tests are scheduled in FY97 to qualify, safety certify, and man-rate the system design. Operational tests are scheduled for FY98 to be followed by a Milestone III production decision. Procurement of 18,190 missiles is planned for FY99 through FY09 with fielding to the infantry battalion anti-armor platoon. Although it is a unilateral Marine Corps ACAT III program, the Army is currently pursuing development of the Multi-Purpose Individual Munition (MPIM) program that will share Predator’s flight module and launcher assemblies. An existing Memorandum of Agreement outlines the “*Joint Effort*” parameters concerning the sharing of technology between the Marine Corps Predator and the Army’s MPIM program.

DEVELOPER/MANUFACTURER

Lockheed Martin

Anti-Armor Weapon System-Heavy (AAWS-H)

DESCRIPTION

AAWS-H will be the follow-on to the TOW missile system. It will incorporate improvements in range, lethality, survivability, and target acquisition. The AAWS-H missile may be delivered by the existing TOW launcher and sights with appropriate upgrades to include improved target acquisition systems. The concept of employment mirrors the current TOW system with the exception of its fielding. The TOW will be removed as the Marine Corps transitions to the new family of lethal anti-armor weapons, the Javelin and Predator. Consequently, AAWS-H will be found only in the infantry regiments, tank battalions and the light armored reconnaissance battalions within the GCE. The Acquisition Objective (AO) for the AAWS-H is 754.

PROCUREMENT PROFILE:

FY97

FY98

Quantity:

0

0

OPERATIONAL IMPACT

The AAWS-H is designed to address shortfalls in the current TOW system that render it unsuitable for the battlefield of the future. The TOW's large firing signature, long flight time, and wire guidance system combine to create a significant threat to the gunner and to the system's survivability on the battlefield. The TOW missile is also vulnerable to currently fielded enemy countermeasures and its effectiveness will be further reduced with the proliferation of Active Protection Systems (APS). More critically, the Marine Corps TOW inventory will reach the end of its shelf life within the next ten years. Acting now to identify and field a suitable replacement for the TOW enables the Marine Corps to maintain a relevant and capable heavy antitank weapon.

PROGRAM STATUS

AAWS-H is funded as a R&D effort beginning in FY98. The Marine Corps will join with the Army in the Follow-On To TOW (FOTT) Program as a means of fulfilling its AAWS-H requirement. IOC is required in FY04 with FOC in FY07.

DEVELOPER/MANUFACTURER

TBD

Antipersonnel Obstacle Breaching System (APOBS)

DESCRIPTION

APOBS is a portable, two-man system employed in combat to breach lanes through antipersonnel mines and wire obstacles. Weighing 130 pounds, APOBS can be employed in 2 minutes to breach a 1 by 45 meter path, while providing a 25 meter safe stand-off distance for the breaching team. APOBS will replace the M1A2 Bangalore Torpedo Demolition Kit.

When a minefield/wire obstacle is encountered, the breaching team will place the system in the firing position and activate the rocket motor. After a short delay to allow the team to obtain cover, the rocket will launch, pulling the fuse and line charge behind it. Normal deployment will place the last grenade of the line charge approximately 25 meters forward of the firing position. The fuse is activated by the force of the rocket motor. A delay detonator inside the fuse causes the line charge to detonate once it lands on the obstacle.

PROCUREMENT PROFILE:

Quantity:

FY97

0

FY98

100

OPERATIONAL IMPACT

APOBS significantly improves the stand-off breaching capability of Marine Corps infantry and combat engineer elements against antipersonnel mines and wire obstacles. One APOBS creates a breach lane equivalent to three bangalore torpedo demolition kits weighing 594 pounds and taking a squad of Marines more than 15 minutes to deploy. APOBS takes two men 2 minutes to deploy and it provides a 25-meter stand-off range.

PROGRAM STATUS

APOBS is scheduled for a conditional Milestone III decision in 2nd Quarter FY97. Systems produced in FY98 will be used for first article and follow-on test and evaluation. Full rate production is to start in FY99.

DEVELOPER/MANUFACTURER

Coastal Systems Station, Panama City, FL

Naval Surface Warfare Center (Crane and Indian Head Divisions, and White Oak Detachment)

Production - TBD

Aviation Combat Element Programs

The Aviation Combat Element (ACE) provides the MAGTF commander with enormous flexibility, mobility, and firepower. Part of the ACE's function is to provide day and night, all-weather air support to the MAGTF. It accomplishes this mission through responsive offensive air and assault support. Offensive air support isolates the battlespace and provides timely and accurate close air support to maneuvering forces. Assault support ensures the rapid buildup of combat power ashore, and provides a means to quickly maneuver ground forces in the battlespace. The following aviation programs enhance and complement the Marine Corps expeditionary nature and execution of OMFTS.

Assault Support

MV-22 Osprey

DESCRIPTION

The MV-22 Osprey is a tiltrotor, Vertical/Short Takeoff and Landing (V/STOL) aircraft designed to replace the CH-46E, CH-53D, and RH-53D aircraft presently operating in support of the Marine Corps. The MV-22 will join the AAV and LCAC as an integral part of the amphibious triad necessary to execute the concept of OMFTS. Specific missions include amphibious and land assault, raid operations, medium cargo lift, Tactical Recovery of Aircraft and Personnel (TRAP), fleet logistic support, and special warfare. The MV-22's design incorporates the advanced but mature technologies of composite materials, fly-by-wire flight controls, digital cockpits, airfoil design, and manufacturing to fulfill its multi-service combat and operational requirements. The MV-22 Osprey is capable of carrying 24 combat-equipped Marines or a 10,000 pound external load, and deploying 2,100 nautical miles with a single aerial refueling. The MV-22's 38-foot rotor system and engine/transmission nacelle mounted on each wingtip allow it to operate as a helicopter for takeoff and landing. Once airborne, the nacelles rotate forward 90 degrees, converting the MV-22 into a high-speed, high-altitude, fuel-efficient turbo-propeller aircraft. The MV-22 is a multi-mission aircraft originally designed for use by all the services. Currently, the Marine Corps, Navy, and Air Force have committed to fielding this unique aircraft. Procurement of the MV-22 remains the Marine Corps number one acquisition priority.

PROCUREMENT PROFILE:

Quantity

FY97

5

FY98

5

OPERATIONAL IMPACT

The MV-22 will be the cornerstone of the Marine Corps assault support aircraft possessing the speed, endurance, and survivability needed to fight and win on tomorrow's battlefield. This combat multiplier represents a quantum improvement in strategic mobility and tactical flexibility for amphibious and prepositioned maritime forces.



PROGRAM STATUS

The program is currently in the EMD phase. Specific test accomplishments include the successful completion of Operational Assessment IIB conducted by COMOPTEVFOR, icing trials, high/hot hover performance trials, and the accrual of over 1,100 total flight hours on the Full Scale Development (FSD) aircraft. The total programmed buy for the Marine Corps, Navy, and Air Force is projected at 523 aircraft. The Marine Corps requirement is for 425 aircraft.

DEVELOPER/MANUFACTURER

Bell Helicopter Textron, Fort Worth, TX

Boeing Defense and Space Group, Helicopter Div., Philadelphia, PA

H-1 Upgrade (4BN/4BW) Program

DESCRIPTION

The H-1 Upgrade (4BN/4BW) program replaces the current two-bladed rotor system on the UH-1N and AH-1W aircraft with a new, four-bladed, all-composite rotor system coupled with a sophisticated, fully-integrated cockpit with state of the art technical enhancements. The UH-1N is a two-place, combat utility helicopter which provides airborne C2, supporting arms coordination, medical evacuation, maritime special operations, insertion/extraction, and search and rescue. The AH-1W is a multi-mission, two-place, tandem cockpit, twin-engine attack helicopter capable of land and sea-based operations. It provides close-in air support under day, night, and adverse weather conditions. Additionally, it is capable of anti-armor/anti-helicopter operations, armed escort, armed and visual reconnaissance, and supporting arms coordination.



In addition to the new rotor system and cockpit, the H-1 Upgrade will incorporate a new performance matched transmission, a four-bladed tail rotor and drive system, and upgraded landing gear for both aircraft. For the AH-1W, structural modifications to support six weapons stations will be completed. The 4BW increases aircraft agility, maximum continuous speed, and payload. The advanced cockpit reduces operator workload,

improves situational awareness, and provides growth potential for future weapons and joint interoperability. It integrates on-board planning, communications, digital fire control, self-contained navigation, night targeting, and weapons systems in mirror-imaged crew stations. The 4BN incorporates the 4BW rotor system and dynamic components, and maximizes commonality and supportability between the two aircraft. The 4BN program returns the required aircraft power margins, provides adequate mission payload and warfighting capability growth potential.

OPERATIONAL IMPACT

The H-1 Upgrade (4BN/4BW) program is designed to reduce life-cycle costs, significantly improve operational capabilities, resolve existing safety deficiencies, and extend the service life of both aircraft. Commonality between aircraft will greatly enhance the maintainability and deployability of the systems with the capability to support and operate both aircraft within the same squadron structure.

PROGRAM STATUS

The H-1 Upgrade (4BN/4BW) program completed a review by the Joint Requirement Oversight Council (JROC) on 12 September 1996. The JROC validated the Key Performance Parameters and delegated ORD approval authority to the Commandant of the Marine Corps. Additionally, a DAB Readiness Meeting (DRM) on 7 October 1996 resulted in a decision to proceed with the 4BW and delay the 4BN for 90 days pending further study. On 15 November 1996, Bell Helicopter Textron Incorporated signed an EMD contract with the U.S. Government for development of the 4BW with a priced option for the EMD phase of the 4BN. The DAB-directed studies were completed in December 1996. On 2 January 1997, the priced option was exercised linking the 4BN and 4BW programs back together.

DEVELOPER/MANUFACTURER

Bell Helicopter Textron Inc.

KC-130J

DESCRIPTION

The KC-130 is a versatile multi-engine, tactical aerial refueler/transport which supports all six functions of Marine aviation. It is the only long-range assault support capability organic to the Marine Corps. The KC-130J with its increase in speed and range features an improved air-to-air refueling system, state-of-the-art flight stations, night vision lighting and an augment crew station. It also includes a fully integrated digital avionics architecture, a propulsion system with digital electronic controls, an advanced technology six-bladed propeller system, and an improved cargo handling system with a 250 knot cargo ramp and door. The KC-130J will provide the MAGTF commander with a state-of-the-art, multi-mission, tactical aerial refueler/transport well into the next century. The Marine Corps desires to replace its aging fleet of KC-130Fs with the new KC-130J.

PROCUREMENT PROFILE:

FY97

FY98

Quantity:

4

0

OPERATIONAL IMPACT

The KC-130 provides fixed-wing and helicopter tactical in-flight refueling, rapid ground refueling of aircraft or tactical vehicles, assault air transport of air-landed or air-delivered personnel, supplies and equipment. It also provides command and control augmentation, pathfinder, battlefield illumination, medical evacuation, and search and rescue mission support. This force multiplier is well-suited to the mission needs of a forward-deployed MAGTF. The KC-130J will bring increased capability and mission flexibility with its SATCOM system, survivability enhancements, night systems, enhanced rapid ground refueling, variable speed refueling paradrogue, and improved aircraft systems. Greater reliability and maintainability, coupled with lower operating and support costs, will result in lower life cycle costs for the KC-130J.

PROGRAM STATUS

The KC-130J is a COTS aircraft which is currently in production. Initial KC-130J delivery is anticipated late in FY99.

DEVELOPER/MANUFACTURER

Lockheed Martin

OFFENSIVE AIR SUPPORT

AV-8B Harrier Remanufacture (Reman)

DESCRIPTION

The AV-8B Harrier is a single-seat, subsonic, vectored-thrust, light attack aircraft. Its V/STOL design gives it the capability to operate from a variety of land and sea-based platforms. Current Harrier II plus radar standards incorporate an improved engine, night warfighting capabilities, and the APG-65 multi-mode radar. The remanufacture program will upgrade 72 older day-attack aircraft to the current radar/night-attack standard, at approximately 80 percent of the cost of a new aircraft.

PROCUREMENT PROFILE:

Quantity: (Reman)

FY97

12

FY98

11

OPERATIONAL IMPACT

The MAGTF relies heavily on its complementary aviation assets to offset limited organic artillery and tanks assets and to provide required fire support. The V/STOL capability of the AV-8B is well-suited for providing dedicated close air support to Marine ground forces. The AV-8B operates from ships as small as an LPH, from rapidly constructed expeditionary airfields, from forward sites such as roads, and from damaged conventional airfields. The addition of night-attack and radar capabilities allows the Harrier to be responsive to the needs of the MAGTF for expeditionary night and adverse weather offensive air support.



PROGRAM STATUS

The upgrade of 72 aircraft are programmed through FY01.

DEVELOPER/MANUFACTURER

McDonnell Douglas

F/A-18C/D Hornet

DESCRIPTION

The F/A-18 Hornet is a twin-engine, supersonic, strike-fighter aircraft. It fulfills both the air-to-air and air-to-ground mission requirements and can operate from conventional airfields and aircraft carriers. The F/A-18Cs delivered since FY90 have increased night and marginal weather capability, including a color moving map display, night vision goggle-compatible lighting and a navigation forward-looking infrared (NAVFLIR) sensor. The two-seat version, F/A-18D, incorporates all warfighting capabilities of the F/A-18C and will include a tactical reconnaissance capability. This aerial reconnaissance capability, ATARS, provides near real-time aerial imagery to the MAGTF and will deploy with four systems per VMFA (AW) squadron beginning in FY99.

PROCUREMENT PROFILE:

Quantity:

FY97

6

FY98

0

OPERATIONAL IMPACT

The F/A-18C provides modern multi-mission offensive and defensive anti-air capability and offensive air support. The F/A-18D provides the MAGTF with a platform capable of tactical air control and reconnaissance, while retaining the capabilities of the F/A-18C. Both aircraft provide powerful and flexible air support and suppression of enemy air defenses. The maintainability and multi-mission capabilities of the F/A-18 make it well-suited to the needs of the MAGTF in an austere expeditionary environment. Continued procurement enables the Marine Corps to sustain the F/A-18 Hornet into the 2010s.



PROGRAM STATUS

The Marine Corps anticipates programmed upgrades to enhance the current capabilities of F/A-18 weapons, communications, and reconnaissance systems to ensure that the support from these state-of-the-art warfighters continues well into the 21st Century.

DEVELOPER/MANUFACTURER

McDonnell Douglas
Northrop Grumman
Hughes

Combat Service Support Element Programs

The Combat Service Support Element (CSSE) is task-organized to sustain the GCE and ACE beyond their own organic capabilities. It accomplishes this goal by providing several key functions. These include supply, maintenance, transportation, general engineering, health services, and services. The CSSE is fully deployable on amphibious shipping and is an integral component of the expeditionary, sea-basing support concept for executing OMFTS.

Medium Tactical Vehicle Remanufacturing (MTVR) Program

DESCRIPTION

The current Marine Corps medium tactical vehicle fleet, which consists of the M939A1 and M809 series trucks, will begin to reach the end of its service life in FY00. The poor mobility, limited load carrying capacity, and age of current vehicles make replacement or modernization mandatory. A remanufacturing program was chosen by the Marine Corps as the most cost-effective method for upgrading its fleet. Mobility and payload capacity will be enhanced by more powerful engines and powertrain components and an independent suspension.

PROCUREMENT PROFILE:

FY97

FY98

Quantity:

0

0

OPERATIONAL IMPACT

All Marine Corps medium vehicles will be remanufactured or replaced, at the contractor's option, providing an additional 22-years of service life. These remanufactured or new vehicles will provide a tremendous improvement over the current vehicles and will retain a dual-rating capacity of at least 7 tons off-road and 12 tons on-road. Significant improvements in reliability and maintainability are expected as a result of the reduced shock and vibration from the independent suspension.

PROGRAM STATUS

A Milestone I/II decision was approved in October 1995 for this ACAT II program. A joint program with the Army has been established and contractor prototypes will be delivered in late FY97. LRIP is scheduled to start in FY99 with IOC in FY00.

DEVELOPER/MANUFACTURER

TBD

Light Tactical Vehicle Remanufacture (LTVR) Program

DESCRIPTION

The Marine Corps light tactical vehicle fleet consists of approximately 17,500 HMMWVs. Fielding of the HMMWV began in 1986 and was completed in 1995. With an Economic Useful Life (EUL) of 14 years, the Marine Corps HMMWVs will begin to reach the end of their EUL in 2000. The LTVR program is funded and scheduled to remanufacture (rebuild and improve) or replace approximately 10 percent of the HMMWV fleet per year (1,750 vehicles) beginning in FY00.

PROCUREMENT PROFILE

The entire light tactical vehicle fleet of HMMWVs will be remanufactured or replaced to ensure an additional 14 years of EUL. The LTVR program is currently funded as a 10 year acquisition program beginning in FY00 and concluding in FY09.

OPERATIONAL IMPACT

These remanufactured or new vehicles will be equipped with numerous system component upgrades to improve vehicle safety, reliability (improved electrical, brake and drive train systems), availability, maintainability, durability (corrosion prevention), and human factors.



PROGRAM STATUS

A Milestone I/II decision is anticipated during 3rd Quarter FY97. Production is scheduled to begin in FY00 with the first vehicles fielded in FY01.

DEVELOPER/MANUFACTURER

TBD

Automatic Test Equipment Program

DESCRIPTION

The Automatic Test Equipment Program consists of the Third Echelon Test Sets (TETS) which will provide 3rd and 4th echelon maintenance activities of the CSSE with a support capability for all Marine Corps commodity areas. TETS will provide diagnostic testing and fault isolation from Line Replaceable Units (LRU) to Shop Replaceable Units (SRU). The SRU is the smallest electronic component repairable or replaceable at the intermediate unit level. Organizations tasked with providing maintenance support throughout the MAGTF must be prepared to perform their missions in a variety of combat and non-combat expeditionary environments. Maneuver warfare stresses the importance of minimizing the time required to make combat essential equipment fully operationally capable. Maintenance units must be capable of repairing systems as far forward as possible.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	8	28

OPERATIONAL IMPACT

The MAGTF has numerous systems and equipment that contain printed circuit cards. However, the Marine Corps has no manportable test capability that can be used to fault isolate and repair line replaceable units down to the individual circuit card assemblies. This deficiency frequently requires maintenance personnel to evacuate equipment to rear areas for required repairs. As weapons systems become more complex, the amount of MAGTF equipment containing Secondary Repairables (SECREPs) with replaceable electronic components is increasing. The Marine Corps has recognized the need for and has fielded automated test equipment to support maintenance of equipment containing LRUs/SRUs. TETS will significantly enhance 3rd and 4th echelon maintenance support capabilities.

PROGRAM STATUS

TETS is in the EMD phase. Milestone I/II occurred on 11 May 1995. Milestone III is planned for March 1998.

DEVELOPER/MANUFACTURER

Prototype - Automatic Test Support Business Center, MCLB, Albany, GA

Other Support to the MAGTF

Nuclear, Biological, and Chemical (NBC) Defense Program

DESCRIPTION


The Marine Corps is pursuing a number of enhancements that will increase the effectiveness of personnel and units within an NBC environment. Over the past decade, there has been a proliferation of chemical and biological agents. Marines must be able to defend themselves and continue to operate in an NBC environment. The following efforts are on-going:


❑ **Chemical/Biological Incident Response Force (CBIRF)** is a Marine Corps unique organization that provides rapid initial consequence management to mitigate the effects of a chemical and/or biological terrorist incident in support of a designated civilian or military commander. The CBIRF will also provide training to DON organizations and assist with the development of new equipment, techniques and procedures for responding to the use of chemical and biological agents. The CBIRF is equipped with a variety of state-of-the-art items that will enable the unit to perform its mission in chemical/biological detection, decontamination, medical, security, and service support. Procurement efforts to support the CBIRF are ongoing and involve many different kinds of equipment and manufacturers. Initial procurements involve state-of-the-art, COTS-certified items that are readily available. Milestone I/III for the first items occurred in the 1st Quarter FY97.


❑ **Joint Service Light Nuclear, Biological, and Chemical Reconnaissance System (JSLNBCRS)** is a joint service program to locate, mark, and verify the existence of radiological, biological, and chemical hazards in support of land operations. Using JSLNBCRS, the MAGTF commander will be able to maneuver his forces to avoid contaminated areas. This system will provide units accurate and rapid NBC combat hazard information. JSLNBCRS will reduce deficiencies identified in Mission Area (MA) 23, Close Combat, and will support the capability to conduct operations in an NBC environment as stated in the Marine Corps Master Plan. JSLNBCRS anticipates using LAVs operating with division reconnaissance elements and HMMWVs deployed by joint service forces near airfields, forward arming and refueling points (FARPs), on main supply routes, and in support of command posts displacements. Each platform is composed of a vehicle and an equipment suite subsystem. FOC is scheduled for FY02.

Joint Service Lightweight Integrated Suit Technology (JSLIST) I

Program is a joint service protective ensemble development and testing effort. The JSLIST I Program implements a modified NDI, rapid-prototyping acquisition strategy. The program consolidates the individual service's chemical protective garment developmental efforts to achieve efficiencies and minimize the fielding of different garment types. Unique service requirements are accommodated through test and analysis of multiple materials and several configurations. Mission needs will continue to be met and shortcomings in current technology remedied. The JSLIST I Program is evaluating chemical/biological protective overgarments, battle dress uniforms, and underwear. Initial fielding is scheduled for FY97.

 ***Joint Biological Point Detection System (JBPDS)*** provides real-time biological agent detection, warning, and identification. This system is self-contained and portable, and requires minimal operations and maintenance support. It can utilize an alternate power source and provide two-way communications either through a telemetry link, a secure command and control radio frequency link, or a two-wire surface link. The JBPDS delivers both a visual and aural warning upon detection of possible biological agents. IOC is scheduled for FY99.

 ***Small Unit Biological Detector (SUBD)*** is an ongoing Research and Development initiative to provide the user with a lightweight, real-time point biological detector. The focus of this program is to develop state-of-the-art detection and to provide the user with a portable hand-held detector.

 ***Joint Warning and Reporting Network (JWARN) Program*** will provide uniform integration and analysis of NBC detection information with C4I2 systems. JWARN will operate on the battlefield to automate the NBC warning and reporting process currently performed manually by the Army, Navy, Air Force, and Marine Corps. It will provide the commander with a fully automated NBC detection and warning network wherever contributing detectors are employed or when data is provided by analysis from another reliable source. Using C4I systems, the JWARN will automatically format digital NBC reports and disseminate critical contamination information internal and external to the command. The JWARN will monitor and display NBC information on a continuous basis and will automatically transmit such data in appropriate NBC report format. In addition, the JWARN will generate NBC reports required by the NATO. The JWARN will integrate with the Navy-developed Vapor Liquid Solids (VLS) track software system, and the Army's Multipurpose Integrated Chemical Agent Alarm (MICAD) hardware system. Initial capability is scheduled for FY97.

❑ **Joint Chemical Agent Detector (JCAD)** is a joint program with the Air Force as the lead service. The JCAD will provide small lightweight chemical agent detectors for the services on multiple platforms, to include aircraft, ships, ground vehicles, and personnel. The JCAD will be capable of detecting chemical agents when employed by mechanized, motorized and heliborne units, or while carried by individuals. The JCAD will be maintained by unit NBC specialists. Operation may be by NBC specialists, security force personnel, medical, vehicle/air crewman or as designated. Initial fielding of the JCAD is scheduled for FY02. The JCAD is in the pre-EMD phase utilizing industry to obtain information on current technologies and developers for further evaluation to meet the requirements of the joint ORD. A Milestone II Decision is scheduled for 4th Quarter FY97.

❑ **Advanced Ground Laser Eye Protection (AGLEP)** is a joint Army/Marine Corps program. The system will provide protection from frequency agile lasers operating anywhere within the electromagnetic spectrum. AGLEP will be issued to personnel assigned to MAGTFs for specific contingencies and to Marine Security Force personnel. No increase in personnel is required to operate or maintain this system. Initial procurement will begin in FY98, with a total quantity of 60,000 to be procured by FY00. A Joint User Evaluation was conducted during 1st Quarter FY97 to determine acceptability of reflective lens technology. The Army's Natick Research and Development Engineering Center will conduct a market survey to evaluate possible manufacturers.

PROCUREMENT PROFILE

To be procured in sufficient quantities to adequately sustain MEFs during extended operations in an NBC environment.

OPERATIONAL IMPACT

Equipment being fielded will ensure Marines can fight in all environments. All of the above equipment is easy to maintain and reliable. Marines will have the capability to conduct extended operations in an NBC environment.

DEVELOPER/MANUFACTURER

Principal Design Activity – Natick Research and Development Engineering Center; MARCORSYSCOM

Individual Combat Clothing and Equipment (ICCE) Program

DESCRIPTION

Individual clothing and equipment used and carried by Marines in the field have a direct and immediate impact on survivability and mission accomplishment. The Marine Corps is modernizing ICCE by making them more durable, lighter, less bulky, and more comfortable. By maximizing the use of similar items that are commercially available, the time to field new ICCE is greatly reduced. The following items are on-going programs:


❑ **The Infantry Combat Boot** is a replacement for the current combat boot. The infantry combat boot is a black, 8.5 inch boot of welt or stitchdown construction, with an improved outer sole for dissipation of shock and greater durability. It has a waterproof, breathable bootie consisting of an expanded Teflon membrane laminated to an outer tricot knit and an inner, polyester Cambrelle lining. The boot has a fungicide treated full grain leather upper with RTS Cordura side panels. The sole is dual density with a Vibram bio-sole outsole and a polyurethane midsole. The lacing system will be of toe-up construction with brass eyelets. A full complement of sizes will be offered. IOC is 2nd Quarter FY97.

❑ **The Infantry Shelter** will replace the shelter half. It is a two-person, three-season, free standing double-walled tent which incorporates a vapor permeable tent body, waterproof floor, and a waterproof rain fly to provide a vestibule area for gear storage. The Infantry Shelter will weigh less than 8 pounds. Additionally, the rain fly will be free standing, have blackout protection, and be adaptable for use independent of the tent body. IOC is 3rd Quarter FY97.

❑ **The Family of Body Armor** consists of an inconspicuous soft armor vest, an outer fragmentation vest and 2 ballistic plate inserts that fit into the outer vest. The total system will weigh no more than 30 pounds. The inconspicuous soft armor will be worn under the battle dress utilities. It will offer protection from small caliber handguns. The outer vest will offer protection equal to the current Personal Armor System Ground Troops (PASGT) vest. It will provide better durability, removable armor inserts and be woodland camouflage in color. It will be front opening and have modular components that protect the throat, neck and groin areas. It will incorporate both a front and back ballistic plate insert. The ballistic plates will weigh no more than 5 pounds each. The inconspicuous vest will not be worn with the other components. The system should offer better casualty reduction than the PASGT and weigh 20 percent less. IOC is 2nd Quarter FY98.

The 2nd Generation Extended Cold Weather Clothing System

(2GECWCS) consists of a parka and trousers constructed of a waterproof, wind proof, breathable, tri-laminate fabric that incorporates features requested by Marines. Improvements include a two-way entry pocket design, water channels to protect critical area from potential leakage, removal of the taffeta nylon lining to reduce cost, improved breathability, a roll and stow hood, and a cordura nylon reinforcement of the elbow and knee areas to improve durability. The 2GECWCS garment will replace the current wet weather parka and trousers and the field jacket. IOC was achieved 4th Quarter FY96.

 ***The Multi-Purpose Cart (MPC)*** will be a lightweight, compact, litter and carrying system for use with Marine infantry and heavy weapons fireteams. The system will be integrated with the hardware attachment system of the Marine Load System. The platform will be supported by 2 or 4 wheels with independent suspension and be capable of carrying a maximum of 400 pounds. The MPC will have a litter configuration for casualty evacuation, a crew-served weapons and a fireteam logistics support configuration. The system should be able to breakdown and be carried on the back if necessary. The MPC will be able to negotiate all types of terrain. No more than one Marine should be required to move 400 pounds on the MPC. IOC is 2nd Quarter FY98.

PROCUREMENT PROFILE

Most ICCE will be fielded to each Marine in the Fleet Marine Force with certain ICCE fielded to special training allowance pools for drawing.

OPERATIONAL IMPACT

ICCE that is more durable, lighter, less bulky, and more comfortable reduces fatigue and enhances survivability and lethality of all Marines in combat.

Developer/Manufacturer

TBD

Marine Enhancement Program (MEP)

DESCRIPTION

The MEP is geared to develop more lethal infantry weapons and improve field gear for the Marine infantryman. Some of the developments are: Infantry weapons enhancements, lighter gear, more comfortable load-bearing equipment, field gear, survivability items, communications equipment, and navigation aids. The intent of the MEP is not to reinvent technology widely available from commercial sources, but to evaluate and qualify “off-the-shelf” items of equipment. The MEP provides the vehicle by which the Marine’s individual equipment is modernized to keep pace with technological advancements. MEP’s MNS was approved in 1993 and a Marine Corps Order was approved in September 1994.



Training Systems and Devices

DESCRIPTION

Training is the key to combat effectiveness and is a major focus of effort during peacetime. This challenging task is met with standards-based, performance-oriented, and realistic training systems that enhance training and ensure combat readiness. The development of basic individual skills, combined with challenging sustainment training at both the individual and collective level, is essential in preparing for combat and thus receives heavy emphasis. Reduced operating budgets have had a significant impact upon our ability to preserve combat skills and unit readiness. Training simulators and decision-making models provide an investment not only in preserving these skills and readiness, but also in enhancing them. The Marine Corps is continuing to explore and field a number of new training systems and simulators that will contribute significantly to training effectiveness while reducing overall training costs.

The **Indoor Simulated Marksmanship Trainer (ISMT)** is an interactive video marksmanship simulator. It provides enhanced marksmanship skills training for the following weapons: M16A2, M9, M-249, M240G, M-2, MK19, AT4, SMAW, M203, MP5, and shotgun. The ISMT is a classroom simulator that provides four firing positions. The **Infantry Squad Trainer (IST)** is an expanded version of the ISMT that provides 12 firing positions. Using computer-generated imagery and video discs, the systems provide realistic training scenarios that replicate marksmanship and weapons training standards, collective training, and judgmental shoot/no-shoot situations. Additional capabilities include forward observer (FO) training, night vision devices firing, and a shoot-back mechanism that is MILES compatible. In FY97, Marine Security Guard training will be enhanced with the addition of a 9mm MP5 simulator and FOs will benefit from the addition of a closed-loop indirect fire trainer, which will add 60mm and 81mm mortars to the systems. ISMT/IST procurements in FY97 will complete the acquisition objective of 441 ISMTs and 25 ISTs.

PROCUREMENT PROFILE:	FY97	FY98
Quantity: ISMT	169	0
IST	19	0

DEVELOPER/MANUFACTURER

Firearms Training Systems

The **Multiple Integrated Laser Engagement System (MILES) 2000** is the next generation of MILES equipment. It consists of a family of low-power laser devices simulating the direct fire characteristics of weapons organic to a Battalion Landing Team. MILES 2000 provides the capability to

conduct realistic reinforced battalion-size, force-on-force engagements. MILES 2000 will allow for longer operating time, exercise feedback, more realistic weapons' effects, and additional capability beyond earlier MILES systems. Additionally, MILES 2000 will utilize a MILES Target Interface Device which will make MILES interoperable with RETS and PITS ranges.

The *Tank Weapon Gunnery Simulator System (TWGSS)* and Precision Gunnery System (PGS), which will be fielded for the M1A1 and LAV-25 respectively, are MILES 2000-compatible, precision gunnery devices. These devices utilize retro reflectors and a scanning laser that replicate the actual trajectory and ballistics of a round being fired.

The above systems all include an in-depth, after-action review.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity: MILES 2000</i>	<i>7*</i>	<i>3</i>
<i>TWGSS</i>	<i>0</i>	<i>0</i>
<i>PGS</i>	<i>0</i>	<i>0</i>

** Reinforced Battalion sets*

DEVELOPER/MANUFACTURER

MILES 2000 - Cubic Defense Systems
TWGSS/PGS - Saab Training Systems

The *MAGTF Tactical Warfare Simulation (MTWS)* is a computer-assisted warfare gaming system designed to support the training of Marine Corps commanders and their staffs. MTWS will primarily be used in Command Post Exercises (CPXs) in which maneuver forces, supporting arms, and the results of combat are modeled by the system. MTWS will also be used in Field Exercises (FEXs) in which all or part of the combat forces are actual military units. In FEX play, the system is used to record and monitor the actions of live forces rather than simulating those actions as in CPX play. MTWS can be used to plan tactical operations and to evaluate the plan under alternative enemy or environmental conditions.

MTWS provides a full spectrum of combat models required to support Marine Corps exercises. The major functional areas are ground combat, air operations, fire support, ship-to-shore, combat service support, combat engineering, and intelligence. The system provides limited play in EW, communications, and NBC warfare. MTWS uses digitized terrain files for trafficability, cover, and elevation in the area of operations. Weather conditions can be described with resultant effects on ground and sea movement, air operations, and visibility.

MTWS has been fielded to each MEF, MCB Quantico, and to the Marine Corps Air-Ground Combat Center (MCAGCC) to replace the Tactical Warfare Simulation Evaluation and Analysis System (TWSEAS). In FY97, MTWS will interface with a number of the C4I family of simulations. The outyears will include various system upgrades.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	0	0

DEVELOPER/MANUFACTURER

Hardware - Hewlett-Packard
Software - Visicom Lab

Combat Vehicle Appended Trainer (CVAT) is a deployable, high fidelity, full-crew, precision gunnery, networked tactical trainer that supports the M1A1, LAV-25, and the AAV. CVAT will satisfy the Marine Corps requirement for the creation of a synthetic battlefield to include ground forces and C3I for individual crew training, as well as maneuver and tactics training up to and including the platoon level. CVAT will incorporate the actual operational weapons platform into the training system, thus allowing the Marines to train as a full crew in their combat vehicles.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	0	0

DEVELOPER/MANUFACTURER

TBD

The **Remoted Engagement Target System (RETS)** is an automated system of pop-up stationary and moving targets for infantry, armor, and anti-armor training. The system offers computer-driven programmed tactical scenarios or it can be operated in a manual mode with group or individual targets raised on command. RETS will significantly enhance the capability to train individual Marines, crew-served weapons teams, small units, and combat vehicle crews in the employment of their weapon systems under the most realistic combat conditions possible.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	3	0

DEVELOPER/MANUFACTURER

Unisys

Precision Gunnery Training System (PGTS) provides precision gunnery training via simulation for the TOW and Dragon missile systems. The system is a video disc/computer-based system that provides training scenarios for real-time missile trajectory simulation, visual and aural effects, performance feedback, and evaluation. The PGTS is optical and thermal-sight capable, provides obscuration and target size adjustments, and can save and replay mission profiles.

PROCUREMENT PROFILE:

FY97

FY98

Quantity:

0

0

OPERATIONAL IMPACT

Training devices and simulators are a proven and cost-effective augmentation for training Marines about the rigors of combat. They enhance training by increasing skill progression and sustainment. Realism is enhanced by offering a wide variety of tactical scenarios and situations that cannot be safely replicated on live-fire ranges and facilities. Simulators are particularly beneficial to forward-deployed forces aboard ship, or where maintaining perishable skills is difficult. The use of simulators and training devices supports our total force training strategy by providing effective training alternatives to Marine Reserve forces that are geographically distant from major bases and range systems.

DEVELOPER/MANUFACTURER

Universal Systems & Technology, Inc.

Defense Messaging System (DMS)

DESCRIPTION

DMS is an Office of the Secretary of Defense-mandated joint program to integrate the AUTODIN and e-mail functions of the Defense Information Systems Network into a single, secure DoD message communication system. The system consists of computer hardware and software, procedures, standards, and personnel used to electronically exchange messages between organizations and individuals within DoD. DMS will provide all current Banyan e-mail and AUTODIN functionality with the addition of secure networking.

PROCUREMENT PROFILE:	FY97	FY98
<i>Quantity:</i>	<i>15</i>	<i>41</i>

OPERATIONAL IMPACT

DMS, as a replacement for AUTODIN, will provide organizational messaging for all the services and agencies of the DoD. DMS will also be implemented in the tactical environment in conjunction with the fielding of the TDN. DMS is a critical component of the DII and supports C2, administration, and intelligence information exchange to enhance readiness and warfighting capabilities. DMS will also unify all of the DoD under a common e-mail system providing secure networking (Unclassified, Secret, Top Secret, and Special Compartmented Information (SCI)) on a single network and organizational messaging from the desktop.

PROGRAM STATUS

IOT&E is scheduled for 2nd Quarter FY97 leading to a Major Automated Information Systems Review Council III decision in July 1997.

DEVELOPER/MANUFACTURER

Lockheed Martin Federal Systems, Manassas, VA

Asset Tracking Logistics and Supply System (ATLASS)

DESCRIPTION

ATLASS is the Marine Corps primary logistic modernization effort for a deployable, integrated supply and maintenance automated information system capable of supporting the rapid deployment and employment of Marines. Lessons learned during Operation *Desert Storm* emphasized the critical need for improved asset visibility to better support the battlefield commander by eliminating redundant requisitions and reducing delays in shipment of essential supplies.

OPERATIONAL IMPACT

ATLASS fills a critical operational requirement. ATLASS will enable Marines to obtain and manage the information necessary to accurately predict, procure and provide the right combat service support, in the right amount, at the right place and time.

PROGRAM STATUS

The Marine Corps is using a phased development and implementation approach to transition to ATLASS. The remaining phases include:

Phase II Plus: A completed system design was accomplished based upon the initial requirements identified in the MNS of 1993 and the Requirements Statement approved in August 1996. This phase includes the integration of using unit supply and shop-level maintenance functions, as well as the transition to a full client-server and an open system architecture.

Follow-on Modular Enhancements: Previously known as Phase III, this phase will incrementally capture additional functional requirements such as removal of the remaining retail supply processing from the mainframe computer, the incorporation of base/station level materiel management functions, integration of an industry leading warehousing program, and the inclusion of an advanced forecasting module.

PROCUREMENT ISSUES

The architecture associated with the ATLASS project provides the "backbone" of the planned, standard Marine Corps Logistics Architecture. This architecture will support all service/joint logistic systems and is compliant with the MAGTF C4I and GCSS concepts, as well as the DII COE. Hardware purchases will include only the MCHS.

DEVELOPER/MANUFACTURER

Phase II Plus software design was completed at the contractor facility in coordination with Marine Corps representatives from the major functional areas during November 1996. A combined Milestone I/II decision is anticipated during April 1997.

U.S.S. San Antonio Class LPD 17

DESCRIPTION

The U.S.S. San Antonio Class LPD 17 is a newly designed amphibious ship providing large lift capacity for the rapid build-up of combat power ashore. In addition, it significantly enhances the operational flexibility of a three ship Amphibious Ready Group. It will carry 720 Marines, have a vehicle stowage capacity of 25,000 square feet, a well deck sized for two LCACs, and a flight deck for the simultaneous operation of two CH-53E Super Stallions, two MV-22 Osprey tiltrotor aircraft, or four CH-46 Sea Knight helicopters. This ship class is optimized for size, flexibility, and economy.

PROCUREMENT PROFILE:

FY97

FY98

Quantity:

0

0

OPERATIONAL IMPACT

Current emphasis on regional contingencies and rapid deployment by naval expeditionary forces increases the importance of amphibious lift assets. To overcome amphibious lift shortfalls caused by the decommissioning of aging LPDs, LSTs, LKAs, and LSDs, the San Antonio Class LPD will augment the versatility of the LHD and LHA helicopter carriers with its well deck and flight operations capability. The San Antonio Class program continues the comprehensive effort to provide the lift necessary to meet crisis response and forward presence requirements.



PROGRAM STATUS

The 1990 DON Integrated Amphibious Operations and Marine Corps Air Support Requirements Study reaffirmed the San Antonio Class requirement. The MNS was validated in September 1990, and the DAB approved Milestone 0 in November 1990. Preliminary design work was completed in November 1993, and was followed by commencement of contract design. The contract for the lead ship was awarded in December 1996. Initial delivery is scheduled for FY02.

DEVELOPER/MANUFACTURER

Avondale Industries

National Foreign Intelligence Program (NFIP)

The NFIP is composed of 12 programs and the CIA Retirement and Disability System (CIARDS). These NFIP programs are not organizational but rather financial accounts that provide funding for intelligence operations and activities. The Marine Corps participates directly in three component programs of the Director of Central Intelligence-sponsored NFIP:

❑ ***Consolidated Cryptologic Program (CCP)***: The CCP provides for the Marine Corps participation in the United States Cryptologic System. The Marine Support Battalion, working in concert with the National Security Agency and the Naval Security Group, supports the worldwide SIGINT and INFOSEC needs of national decision makers and operational commanders. These Marines routinely augment MAGTFs in direct support of expeditionary forces.

❑ ***General Defense Intelligence Program (GDIP)***: The GDIP funds service and Defense Intelligence Agency (DIA) distributed production functions of the Marine Corps Intelligence Activity (MCIA). It also provides Marine Corps participation in the Defense HUMINT Service (DHS), on CINC staffs and in the Joint Intelligence/Joint Analysis Centers (JIC/JAC). GDIP provides augmentation pay for Marine Corps Reserve personnel performing intelligence duties at the national and theater level. To date, FY97 GDIP funds have provided over 3,000 man hours of reserve intelligence support.

❑ ***Foreign Counterintelligence Program (FCIP)***: The FCIP provides for the Marine Corps participation in DON counterintelligence activities through the Naval Criminal Investigative Service.

The NFIP allocates resources to support reimbursable or direct costs and compensation for over 900 Marines and Marine Corps civilian personnel as well as fund-limited Operations and Maintenance activities.

Joint Military Intelligence Program (JMIP)

The JMIP was established in 1995 to improve the oversight of selected DoD intelligence programs and resources. The Deputy Secretary of Defense is the JMIP Program Executive. The JMIP consists of the following four component programs:

- ☐ Defense Cryptologic Program (DCP)
- ☐ Defense Imagery Program (DIP)
- ☐ Defense Mapping, Charting, and Geodesy Program (DMCGP)
- ☐ Defense General Intelligence and Applications Program (DGIAP)

and the following sub-component programs:

- Defense Airborne Reconnaissance Program (DARP)
- Defense Intelligence Counterdrug Program (DICP)
- Defense Intelligence Agency's Tactical Program (DIATP)
- Defense Space Reconnaissance Program (DSRP)
- Defense Intelligence Special Technology Program (DISTP)



The JMIP funds the RDT&E and procurement associated with the Marine Corps JSIPS National Input Segment (NIS) at Camp Pendleton, CA, and the Common Imagery Ground/Surface System (CIGS) TEG development in the DARP. The NIS, operated by the Marine Corps Imagery Support Unit (MCISU), went fully operationally in 1996. A TEG prototype was delivered to II MEF in September 1996 for user evaluation. The DARP also funds Unmanned Aerial Vehicles (UAV) system RDT&E and procurement to include the Marine Corps PIONEER and the Tactical UAV programs. Although in Navy funding, the DARP has provided the RDT&E and procurement dollars for the ATARS. The Marine Corps will receive thirty-one ATARS for use on the F/A-18D aircraft.

The DCP provides RDT&E funding to enhance the capabilities of the Marine Corps tactical SIGINT forces. DCP RDT&E funding has led to marked improvements in the SIGINT collection and processing capabilities of the Marine Corps. These RDT&E enhancements have been crucial to keeping the Radio Battalions apace of modern communications technology. Specifically, DCP investment has led to fielding and/or improvements to the TPCS, TCAC, MEWSS, and to improvements to the Radio Battalions' radio DF capability, special intelligence communications, and signal intercept capability under the Radio Battalion Modernization and Concept Exploration Program. The fielding of eighteen sets of RREP-SS-1 will occur in FY98 through RDT&E funds provided by the DCP and a \$2.7 million Congressional procurement plus-up to the Marine Corps.

JMIP support to the Marine Corps also funds for pay and allowances, travel, and per diem funds for Marine Corps Reserve intelligence personnel to augment and support CINCs, CINC-supported exercises and activities, and other joint production and exercise functions.

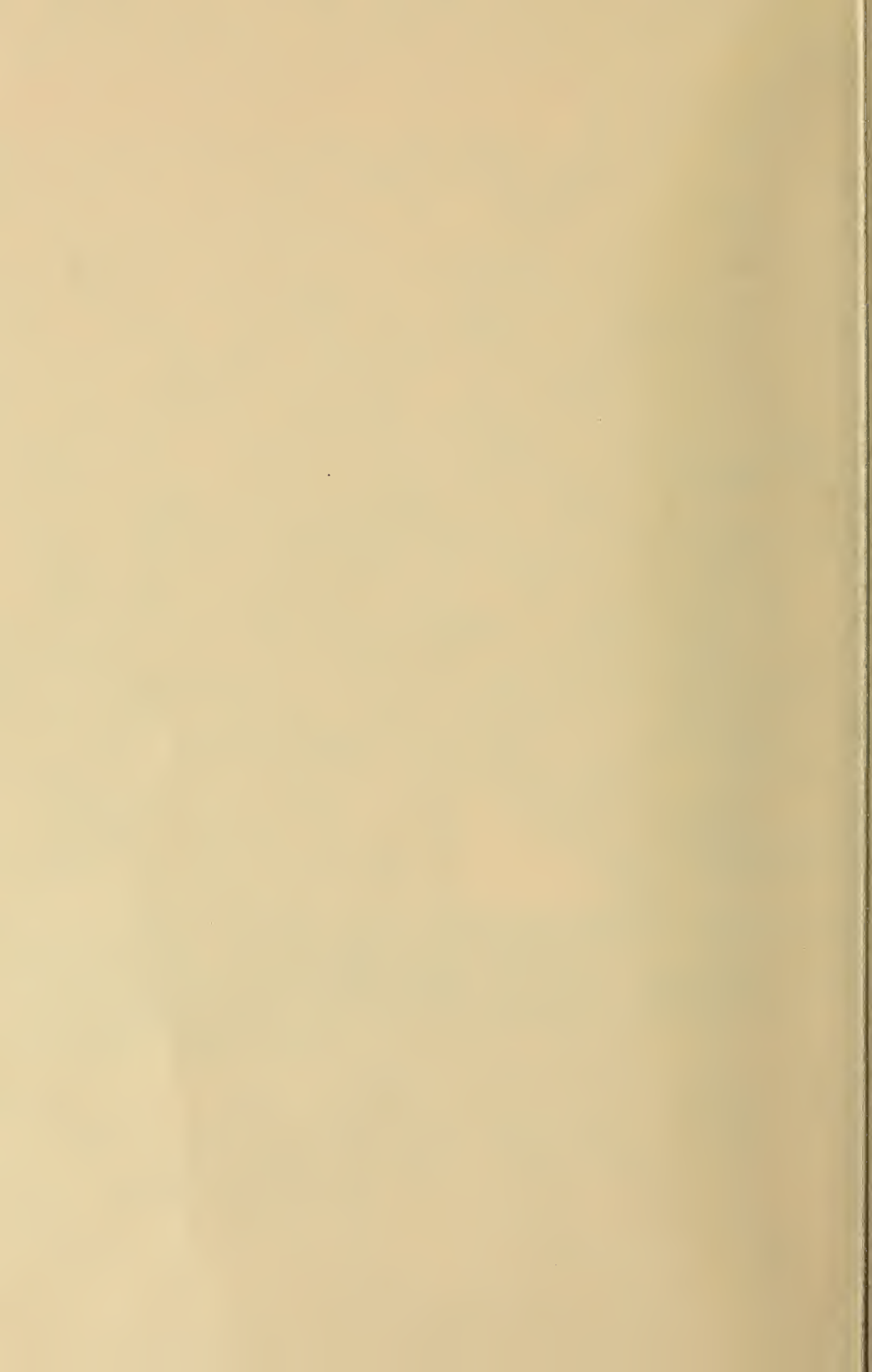
Chapter Five

Fiscal Resource Overview

The primary focus of the Corps in all its endeavors is to provide a premier crisis response force. Ready, decisive, and unbeatable, we possess a singular objective: to serve the Nation as its force of choice. Today, the Corps is meeting all operational commitments with ready, capable forces. Maintaining this capability in the future involves prudent allocation of resources and risk management. In the development of the FY98 Budget, the following resource areas were supported: maintaining readiness of the force; funding of active and reserve end strengths; sustaining momentum in the quality of life programs for our Marines and their families; and, selectively modernizing. Difficult choices were made to comply with available fiscal resources. Ultimately, final decisions are based upon a balance between near-term needs and long-term requirements for the Corps to enter the 21st century.







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Ultimately, fiscal decisions are made by the Department of Defense, and the Corps must comply with the requirements for the Corps in the 21st century.



The FY98 Budget funds an end strength of 216,000 active and reserve Marines and essential training requirements. Fiscal constraints, however, again forced the underfunding of required modernization programs. Thus, while preserving current capabilities, we have done so at the expense of investments needed for the next century. Marine Corps investment in modernized equipment for our ground forces is at a precariously low level — about one-third the level required to sustain a ready, capable Marine Corps in the next century. Further, investment in real property maintenance and military construction at our bases and stations continues to be extremely austere. Finally, research and development funding has been highly selective to allow future replacement of essential ground systems and provide continuing support to the Commandant's Warfighting Laboratory to investigate new concepts and technologies for future conflict.

In sum, the Marine Corps inability to finance investment adequately is a major concern because of the long term implications. If the Marine Corps is to remain the Nation's expeditionary force-in-readiness in the next century, these resource deficiencies must be addressed. This chapter reviews the FY98 Department of Defense (DoD) Budget resources allocated to the Marine Corps.

Fiscal Resources

Funds to support the new defense strategy are programmed, budgeted, authorized, appropriated, obligated, and finally expended to cover service investment and operational requirements. Total Obligational Authority (TOA) refers to the total financial resources available. Budget Authority (BA) refers to financial resources appropriated by Congress. The DoD Planning, Programming, and Budgeting System establishes ground rules for the allocation of DoD TOA. Figure 5-1 displays the BA for all of DoD from FY94 through the FY98 Budget request. As you can see, in FY98 we again are doing "more with less".

BA	FY94	FY95	FY96	FY97	FY98
(FYDP \$B)	251.4	255.7	254.4	250.0	250.7
*Includes DoD Agencies					

FIGURE 5-1: BUDGET AUTHORITY*

There is a general perception that defense spending has grown dramatically over the past few years. As can be seen in Figure 5-2, the opposite is true. The FY98 Budget requests \$250.7 billion in budget authority for the Department of Defense. This continues the real decline

in defense spending begun in 1986. In real terms, the FY98 Budget is 36 percent below that of FY85, the peak year for DoD budget authority since the Korean War.

FIGURE 5-2: DOD BUDGET AUTHORITY TREND* (\$B)



Viewed in broader terms, defense spending as a percentage of total Federal spending has also decreased. Defense spending as a share of our total outlay is near its lowest point in 30 years. This trend is depicted in Figure 5-3.

FIGURE 5-3: BUDGET TRENDS

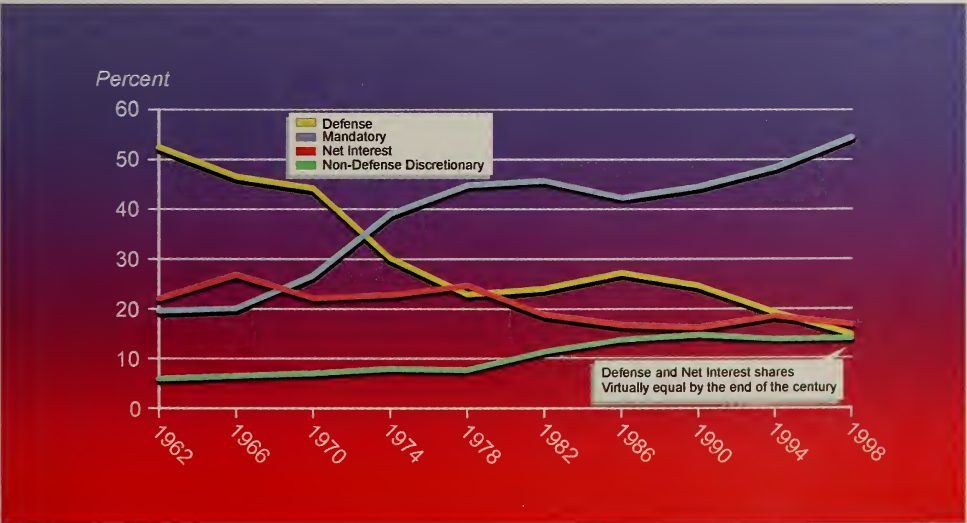


Figure 5-4 is a comparison of the relative amount of resources provided to each service. Although the Marine Corps share is comparatively small, it leads the DoD in converting every dollar into credible combat power.

FIGURE 5-4: SERVICE COMPARISON OF TOA IN THE FY98 DOD BUDGET* (FYDP \$B)

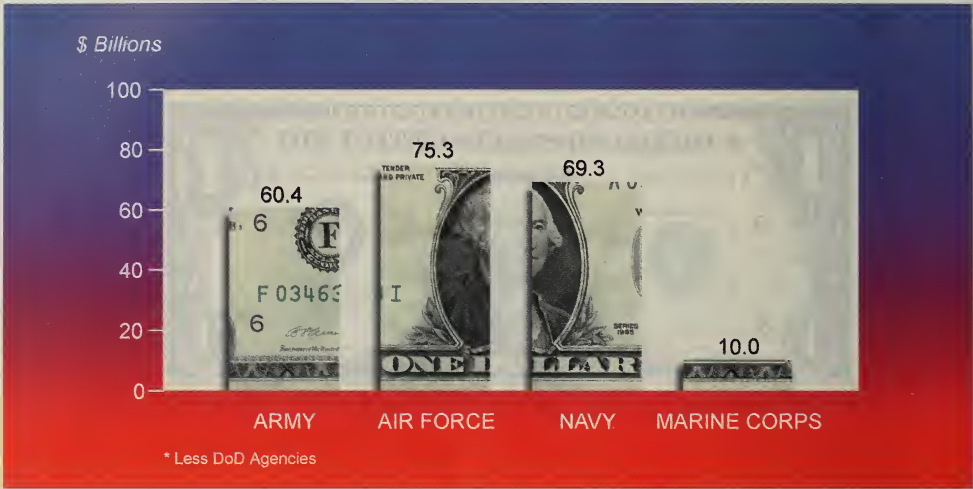
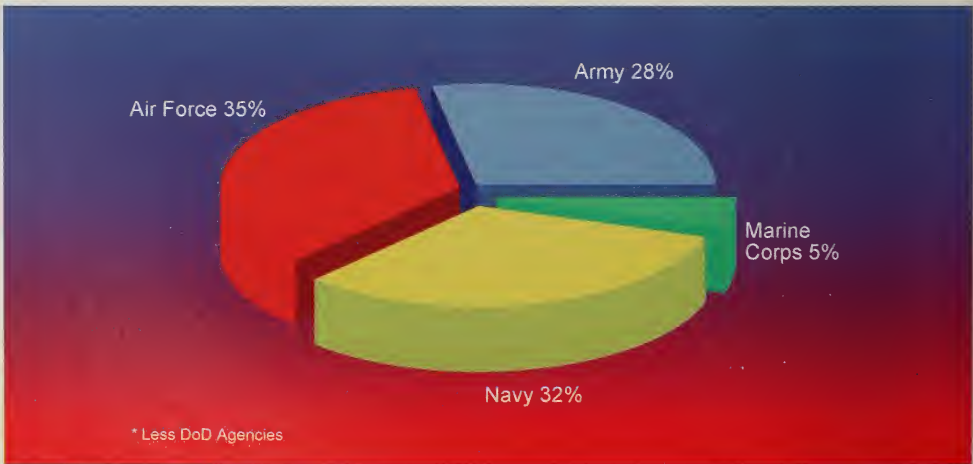


Figure 5-5 depicts the percentage of DoD funds budgeted by each service. Each service's TOA is subsequently divided into appropriations. With approximately 5 percent of DoD's budget, specifically in the Marine Corps account, we provide 12.2 percent of the military personnel and 13.6 percent of general purpose forces.

FIGURE 5-5: DOD TOA FY98 BY SERVICE*



Appropriations

An appropriation is the legal apportionment by an act of Congress to incur obligations for specified purposes and to make payments from the Treasury of the United States. Funds may be expended only for the purpose appropriated. The following are Marine Corps appropriation categories, with a brief synopsis of what each provides:

❑ ***Military Personnel, Marine Corps (MPMC)*** - Active and retired pay, allowances, individual clothing, interest on deposits, expenses for organization movements, expenses for temporary duty travel between permanent duty stations, and subsistence.

❑ ***Reserve Personnel, Marine Corps (RPMC)*** - Pay, allowances, clothing, subsistence, gratuities, travel, and related expenses for personnel of the Marine Corps Reserve.

❑ ***Operation and Maintenance, Marine Corps (O&MMC)*** - Expenses for support of the FMF, equipment and facilities maintenance, civilian employee pay, travel and transportation, training, consumable supplies, recruiting and advertising, base operations, and base communications.

❑ ***Operation and Maintenance, Marine Corps Reserve (O&MMCR)*** - Expenses for operation and maintenance, including training, organization, and administration, repair of facilities and equipment, hire of passenger motor vehicles, travel and transportation, recruiting and advertising, base operations, and communications for the Marine Corps Reserve.

❑ ***Procurement, Marine Corps (PMC)*** - Expenses for the purchase and manufacture of guided munitions and tracked combat vehicles, guided missiles and equipment, communications and electronics, support vehicles, engineer and other equipment, spares, and repair parts.

❑ ***Procurement of Ammunition, Navy and Marine Corps (PANMC)*** - Expenses for the purchase and manufacture of ammunition, to include all unguided munitions. Prior to FY98, PANMC was included in PMC.

The following Navy appropriations include functional areas for which the Marine Corps programs and budgets. The complete Marine Corps TOA includes both Marine-unique appropriations described above, as well as resources from the following appropriations:

❑ ***Military Construction, Navy (MILCON)*** - Acquisition, construction, and installation of permanent public works, naval installations, and facilities for the Navy and the Marine Corps.

❑ **Family Housing, Marine Corps (FHMC)** - Construction, improvements, operation, maintenance, repair, and design of Marine Corps housing and ancillary facilities required at bases and stations.

❑ **Military Construction, Navy Reserve (MCNR)** - Construction, acquisition, expansion, rehabilitation, and conversion of facilities for the training and administration of the Reserve components of the Navy and Marine Corps.

❑ **Research and Development, Ground (R&D,Grnd)** - Research, development, test, and evaluation in the areas of basic research and technology development, advanced technology development, strategic and tactical programs, intelligence and communication programs, and overhead and support costs of the Marine Corps RDT&E effort.

Figure 5-6 displays the TOA allocated to each of these appropriations. As is apparent, investment money (PMC, MILCON, FHMC) has decreased in order to maintain readiness of today's forces (O&MMC, O&MMCR).

FIGURE 5-6: MARINE CORPS TOA (FYDP \$M)

	<i>FY96</i>	<i>FY97</i>	<i>FY98</i>
MPMC	5,743	6,062	6,152
RPMC	385	388	381
O&MMC	2,489	2,294	2,305
O&MMCR	102	110	110
PMC	442	580	374
PANMC	177	132	99
R&D (Grnd)	212	273	230
MILCON	143	157	126
FHMC	262	260	225
MCNR	4	6	7
Total	9,959	10,262	10,009

Figure 5-7 depicts budget trends of the past several years in constant dollar terms. This data reveals the total impact of reduced spending over time. The Marine Corps, in relative and cumulative terms, has absorbed a 19.4 percent reduction in resources since 1991. Further reductions, beyond those already programmed, will severely affect the Fleet Marine Force (FMF) and our ability to maintain ready forces in support of the National Military Strategy.

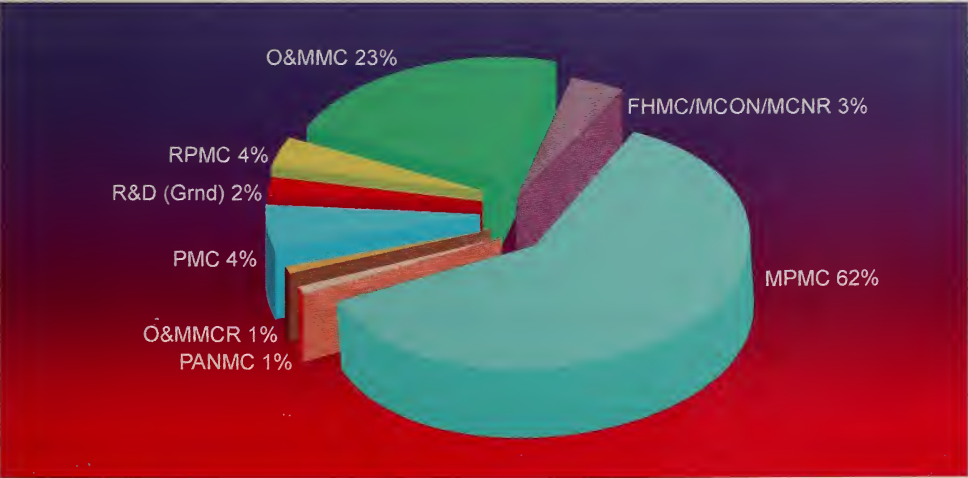
FIGURE 5-7: TOTAL OBLIGATIONAL AUTHORITY (FY98 CONSTANT DOLLARS)



USMC FY98 TOA by Appropriation

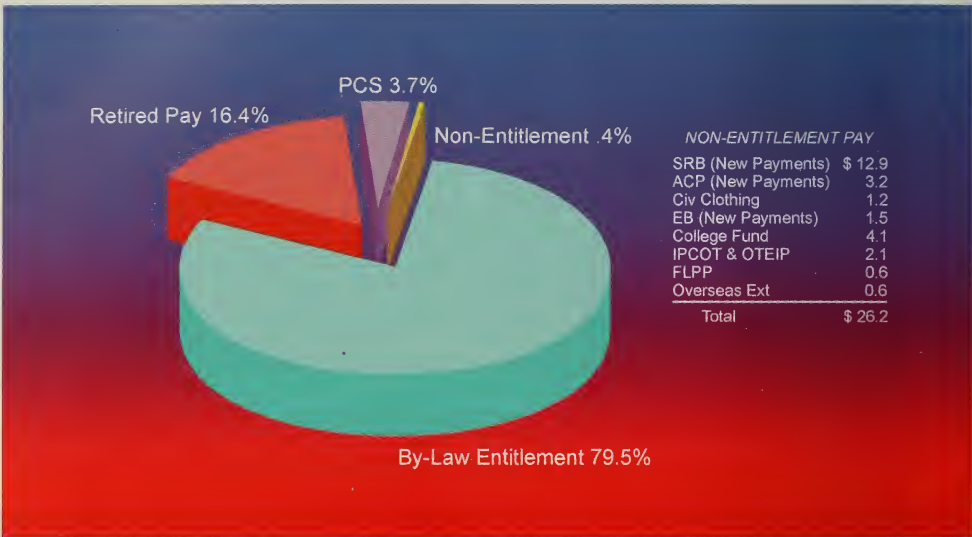
The largest elements within the Marine Corps current budget request are the manpower appropriations and the operation and maintenance accounts. They support our military personnel, readiness, and operations programs. Marine Corps procurement and research and development appropriations account for about 7 percent of the budget request. They support key modernization programs which are critical to the Marine Corps success on future battlefields. Figure 5-8 shows that, combined, these appropriations make up almost 97 percent of the Marine Corps FY98 Budget.

FIGURE 5-8: USMC FY98 TOA BY APPROPRIATION



The Marine Corps Manpower budget is by far our largest appropriation. The vast majority of it goes to by-law requirements as shown in Figure 5-9.

FIGURE 5-9: MILITARY PERSONNEL FY98 BUDGET (FYDP \$M)



The nondiscretionary portions of this appropriation represent compensation for our Marines as authorized by Congress. As identified by both the Marine Corps and the combatant CINCs, adequate compensation is the most important of all quality of life issues. Small discretionary programs (Selective Reenlistment Bonus, Aviation Continuation Pay, Enlistment Bonus, and College Fund) are modest investments which reap large dividends. These programs help the Marine Corps shape its force properly through recruiting and retention and save the taxpayer money through reduced training costs.

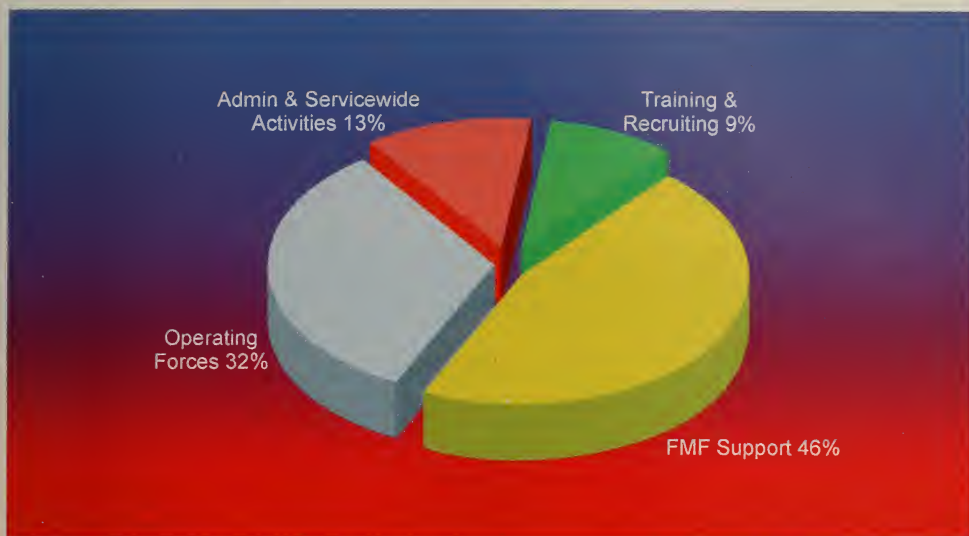
Two other categories of funding, Permanent Change of Station (PCS) and Subsistence in Kind (SIK), provide essential support to our mission. The PCS funding provides for accession, separation, and operational and rotational moves. Funding in this area allows the Marine Corps to maintain its tour length policies and support the professional development of our Marines. Subsistence provides the basic function of feeding our Marines both in garrison and the field.

❑ OPERATION AND MAINTENANCE, MARINE CORPS (O&MMC) BUDGET

The O&MMC budget request of \$2.3 billion represents, in real terms, a reduction of 1.6 percent over FY97. This decline, coupled with increased

environmental and quality of life requirements, reduces our flexibility in matching requirements with resources.

FIGURE 5-10: OPERATION AND MAINTENANCE BY MAJOR ACTIVITY



The O&MMC account is a crucial component of our overall readiness. It provides for the essential logistic functions which allow us to maintain the readiness and sustainability of weapons and equipment used by our forces. Our logistics bases provide support and depot-level maintenance to sustain the daily operations of Fleet Marine Forces, as well as maintaining weapons and equipment for the Maritime and Geographic Prepositioning Programs. Our budget continues to support this vital program through replenishment, modernization, and replacement of equipment during the MPS maintenance cycle. Also funded under this appropriation is the transportation of materiel to and from Marine Corps logistics bases.

The Fleet Marine Force (FMF) support costs are the largest portion of the O&M appropriation. Our supporting establishment, which is essential to the FMF, provides the housing, feeding, training ranges/areas, and other essential facilities and services to support operational and training requirements and resources the welfare of our Marines and dependents.

The O&MMC request also supports training, education, and recruiting activities. The Marine Corps emphasizes education and proficiency in the science and art of warfighting. To accomplish this, our education programs strive to ensure that every Marine can either attend a formal school or participate in a structured self-study program.

PROCUREMENT, MARINE CORPS (PMC) AND RESEARCH AND DEVELOPMENT, GROUND (R&D, GRND)

The PMC budget request of \$473 represents, in real terms, a reduction of 34 percent over FY97. Figure 5-11 depicts how the PMC appropriation is allocated to budget activities in the FY98 Budget. The Communications and Electronics Equipment and Spare and Repair Parts accounts were reduced 34 percent and 42 percent respectively, from FY97 levels.

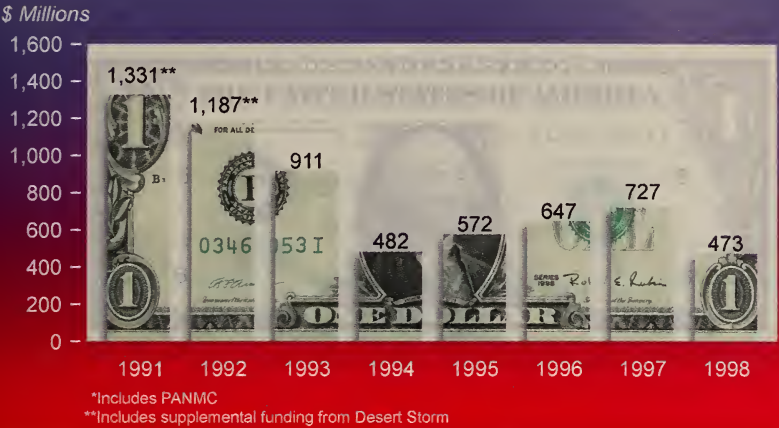
FIGURE 5-11: MARINE CORPS PROCUREMENT (FY98) BY BUDGET ACTIVITY (FYDP \$M)



The PMC and R&D (Grnd) appropriations continue to support the Operational Maneuver From the Sea (OMFTS) concept and development efforts to rapidly improve C4I and selectively modernize the ground combat force. To enhance connectivity and interoperability on the electronically dependent battlefield, priority funding has been given to several C4I initiatives such as the Tactical Data Network (TDN), the Data Automated Communications Terminal (DACT), and the Digital Technical Control (DTC). In the FY98 Budget, we begin replacement of aging and operationally deficient systems with modern and more capable variants, such as the Advanced Amphibious Assault Vehicle (AAAV), the Lightweight 155MM Howitzer, and the Medium Tactical Vehicle Remanufacturing (MTVR) Program. Funding for the procurement of ammunition is now reflected in the Procurement of Ammunition, Navy and Marine Corps appropriation. The budget finances sufficient quantities of ammunition to satisfy Combat Requirement (CR) levels while

maintaining current Strategic and Residual Reserve Requirements (SRR and RRR) inventories. Annual training requirements are also funded.

FIGURE 5-12: PROCUREMENT MARINE CORPS DOLLARS* (FY98 CONSTANT DOLLARS)



The FY98 Budget for the Corps maintains readiness at the expense of modernization — reflecting the difficult choices forced by sharp reductions in total resources. Figure 5-12 depicts the steady decline in the PMC appropriation since 1991. While readiness will remain at the forefront of our resource decisions, the current historically low levels of procurement funding must change if the Marine Corps is to provide the ready, capable, and decisive force-in-readiness needed to meet the uncertain challenges of the next century.

Appendix A

How The Marines Are Organized

Marines are organized as a “*force-in-readiness*” to support national needs. They are divided into three broad categories:

- ☐ Operating Forces ☐ Reserves ☐ Supporting Establishment.

Operating Forces

Operating forces, considered the heart of the Marine Corps, constitute the forward presence, crisis response, and fighting power available to the CINCs. Major elements include the Marine Forces Atlantic and Pacific, Marine Corps Security Forces at naval installations and shipboard detachments, and the Marine Security Guard Battalion with its detachments at embassies and consulates around the globe. About 64 percent of all active duty Marines are assigned to these operating forces.

Marine operating forces are under the command of either the Commander, Marine Forces, Pacific (COMMARFORPAC) or Commander, Marine Forces, Atlantic (COMMARFORLANT). The Marine Force Headquarters is the Marine service component for all Marine operating forces and deals directly with the CINCs for all Marine service related functions. As the operational level command for all Marine forces, COMMARFOR PACIFIC and ATLANTIC advise the CINCs on employment of Marine Forces, while equipping, training, and sustaining those same forces. During combat operations, the MARFOR provides the CINC an operational service component headquarters and theater-wide Marine Corps service support and sustainment of assigned Marine Air Ground Task Forces (MAGTFs) and the emerging Marine Logistics Commands (MLCs).

The major MAGTF (pronounced “*mag-taff*”) combat formation in the United States Marine Corps is the Marine Expeditionary Force (MEF) which is comprised of a division, an aircraft wing, and a force service support group. The Marine Expeditionary Force (I MEF) is located at bases in California and Arizona. The II Marine Expeditionary Force (II MEF) is located at bases in North and South Carolina, and the III Marine Expeditionary Force (III MEF) is forward-based in Okinawa and Mainland Japan. All three MEFs provide Marine Expeditionary Units (MEU’S) for service afloat.

Marine Corps Security Forces and Marine Security Guard Battalion personnel operationally report to the Chief of Naval Operations and the Secretary of State, respectively.

MARINE AIR-GROUND TASK FORCE (MAGTF)

The primary objective of the Marine Corps, as a naval expeditionary force, is to provide combatant CINCs with an effective means of dealing with the uncertainties of future threats, providing forward-deployed units that are inherently balanced, sustainable, flexible, responsive, expandable, and credible. MAGTFs operate forward from the sea as task organized, combined-arms components of naval expeditionary forces. MAGTFs are equipped and trained to conduct forward presence and crisis-response missions while operating in the littoral areas of the world.

MAGTF Capabilities

MAGTF capabilities are not built merely to wait for the next amphibious assault or regional war; they are deployed every day. Through experience, realistic procedures, and honed training routines, the Marine Corps stands ready to respond. Our organization has evolved to handle uncertain world situations and has repeatedly demonstrated its worth. Embarked aboard amphibious shipping, MAGTFs provide decision makers with the capabilities to:

- ☐ Move forces into crisis areas without revealing their exact destinations or intentions;
- ☐ Provide continuous presence in international waters;
- ☐ Provide immediate national response in support of humanitarian and natural disaster relief operations;
- ☐ Provide credible but nonprovocative combat power just over the horizon of a potential adversary, for rapid employment as the initial response to a crisis;
- ☐ Support diplomatic processes for peaceful crisis resolution before employing immediately responsive combat forces;
- ☐ Project measured degrees of combat power ashore, at night, and under adverse weather conditions, if required;
- ☐ Introduce additional forces sequentially into a theater of operations;
- ☐ Operate independent of established airfields, basing agreements, and overflight rights;
- ☐ Conduct combat operations ashore using inherent combat service support brought into the area of operations;

- ❑ Enable the introduction of follow-on MAGTF or joint and/or combined forces by securing staging areas ashore;
- ❑ Operate in rural and urban environments or hostile nuclear, biological, and chemical situations;
- ❑ Withdraw rapidly at the conclusion of operations or remain to help restore stability to the affected areas;
- ❑ Plan and commence execution of a mission within 6 to 48 hours of receiving a warning order (dependent on size).

MAGTF Composition

The Marine Corps task organizes for combat consistent with its statutory tasking to “...*provide forces of combined arms, including aviation...*” by forming forces into integrated, combined-arms MAGTFs employed to accomplish assigned missions. MAGTFs are specifically tailored for rapid deployment by air and/or sea. All MAGTFs are comprised of four elements:

- ❑ **Command Element (CE).** The CE is the MAGTF headquarters. As with all other elements of the MAGTF, it is task organized to provide the command, control, communications, computers, intelligence, and interoperability (C4I2) necessary for effective planning and execution of all operations.
- ❑ **Ground Combat Element (GCE).** The GCE is task organized to conduct ground operations to support the MAGTF mission. It is formed around an infantry unit reinforced with requisite artillery, reconnaissance, armor, and engineer forces and can vary in size and composition from a rifle battalion to one or more Marine divisions.
- ❑ **Aviation Combat Element (ACE).** The ACE is task organized to perform those functions of Marine Corps aviation required to support the MAGTF mission. It is formed around an aviation headquarters with appropriate air control agencies, combat, combat support, and combat service support units. The ACE can vary in size and composition from an aviation detachment of specifically required aircraft to one or more Marine aircraft wings.
- ❑ **Combat Service Support Element (CSSE).** The CSSE is task organized to provide the full range of combat service support functions and capabilities necessary to support the continued readiness and sustainability of the MAGTF as a whole. It is formed around a combat

service support headquarters and may vary in size and composition from a support detachment to one or more force service support groups (FSSGs).

FIGURE A-1: The Marine Air-Ground Task Force



Types of MAGTF Organizations

Regardless of size, all MAGTFs are expeditionary. An expeditionary force is a capability vice a structure. Thus, any size MAGTF could be referred to as a Marine expeditionary force. However, to provide a frame of reference for general sizing, MAGTFs are categorized in the following three types:

- ☐ Marine Expeditionary Force (MEF)
- ☐ Marine Expeditionary Unit (MEU)
- ☐ Special Purpose MAGTF (SPMAGTF).

☐ **Marine Expeditionary Force (MEF).** The MEF is the principal Marine Corps warfighting organization, particularly for a larger crisis or contingency, and is normally commanded by a lieutenant general. A MEF can range in size from less than one, to multiple divisions and aircraft wings, together with one or more force service support groups.

With 60 days of accompanying supplies, MEFs are capable of both amphibious operations and sustained operations ashore in any geographic environment. With appropriate augmentation, the MEF command element is capable of performing the mission of a joint task force headquarters.

MEFs are the primary “*standing MAGTFs*” (i.e., they exist in peacetime as well as wartime). Currently the Marine Corps is organized with three standing MEFs, each with a division, wing, and FSSG. Marine component headquarters (COMMARFORLANT or COMMARFORPAC) may form smaller MAGTFs from these MEFs. The Marine Corps reservoir of combat capabilities – the divisions, wings, and force service support groups – are assigned to these standing MEFs.

A MEF will normally deploy in echelon and will designate its lead element as the MEF (Forward).

FIGURE A-2



❑ **Marine Expeditionary Unit (MEU).** Forward deployed MEUs embarked aboard Amphibious Ready Group (ARG) shipping operate continuously in the areas of responsibility of numerous Unified Commanders. These units provide the National Command Authorities and Unified Commanders an effective means of dealing with the uncertainties of future threats, by providing forward deployed units which offer unique opportunities for a variety of quick reaction, sea-based, crisis response options in either a conventional amphibious/expeditionary role, or in the execution of maritime special operations. The forward deployed MEU(SOC), forged and tested in real-world contingencies, remains the benchmark forward operating Marine force. The MEU is commanded by a colonel and deploys with 15 days of accompanying supplies.

Prior to deployment the MEU undergoes an intensive 6-month training program focusing on its conventional and selected maritime special operations missions. The training culminates with a thorough evaluation and certification as “*special operations capable*” (SOC).

❑ **Special Purpose MAGTF (SPMAGTF).** The SPMAGTF is task organized to accomplish a specific mission, operation, or regionally focused exercise. As such, SPMAGTFs can be organized, trained, and equipped to conduct a wide variety of expeditionary operations in response to a crisis or a peacetime mission. They are designated as SPMAGTF with a location: e.g., SPMAGTF (Somalia). Their duties cover the spectrum from noncombatant evacuation to disaster relief and humanitarian missions.

MAGTF Sustainability

A fundamental characteristic of a MAGTF is its ability to operate for extended periods as an expeditionary force, relying on internal resources for sustainment. All MAGTFs have inherent sustainability to be self-sufficient for preplanned periods. Larger MAGTFs have a deeper, broader, and more capable organic support capability. MAGTFs deploy with a portion of their accompanying supplies sufficient for a specific period of time:

❑ MEF - 60 days

❑ MEU - 15 days

❑ SPMAGTF - As the situation requires.

MAGTFs can augment their organic sustainability by using external support from Navy organizations, wartime host nation support (WHNS) agreements, interservice support agreements (ISSAs), and in-theater cross service support.

Maritime Prepositioning Forces (MPF)

MPFs provide an added dimension in mobility, readiness, and global responsiveness. The MPF program involves 13 ships, organized in three squadrons. These squadrons are strategically positioned in the Mediterranean Sea, the Indian Ocean, and the Pacific Ocean. The MPF program reduces MAGTF response time from weeks to days by prepositioning the bulk of equipment, and 30 days of supplies, for a 17,300-Marine force aboard specially designed ships. Personnel and selected equipment can be airlifted quickly, using roughly 250 airlift sorties, to an objective area to join with required equipment at a secure

site. Equipment and supplies can also be selectively offloaded to support smaller MAGTFs.

As graphically demonstrated in Operation *Desert Shield*, MPFs are integral to the rapid deployment of credible combat power. MPF program flexibility has been increased through selective and innovative loading plans and development of enhanced deployment options.

Unique Unified Commander Support

A CINC or subordinate commander may also require Marine forces that do not possess all elements of a MAGTF; thus, they are not given a MAGTF designation. Examples are installation security forces, engineer and medical support teams for humanitarian operations, deployments for training, law enforcement operations, and mobile training teams. In these cases, forces will be designated by the name of the senior headquarters having operational control; e.g., 1st Combat Engineer Battalion (Rein), 1st Marine Division.

❑ ***Standing Joint Task Force Headquarters (SJTF HQ).*** Recognizing that the key element in joint operations is the Joint Task Force Headquarters, CMC directed COMMARFORLANT/Command General II MEF, and Commanding General Marine Corps Combat Development Command to produce a plan that resulted in the Marine Corps providing a fully capable, expeditionary, JTF HQ organized and equipped to move out on a moment's notice to meet the uncertainties of a chaotic new world. With the completion of Phase I of the resulting three-phase campaign plan, COMMARFORLANT has established the lead elements of a SJTF HQ at Camp Lejeune, NC. The SJTF is focused on joint issues and serves as the standing core of any JTF HQ that USCINCA, USCINCSOUTH, or USCINCEUR may ask their Marine Components to form.

❑ ***Marine Expeditionary Units (Special Operations Capable)*** COMMARFORLANT and COMMARFORPAC maintain forward-deployed MEU(SOC)s in the Mediterranean, Persian Gulf region, and Japan. In addition to conventional capabilities, the MEU(SOC) is augmented with selected attachments to provide enhanced capabilities. These special capabilities include:

- ❑ Close Quarters Battle
- ❑ Specialized Demolition Operations
- ❑ Clandestine Reconnaissance and Surveillance
- ❑ Maritime Interdiction Operations

- ❑ Direct Action
- ❑ Gas and Oil Platform Operations
- ❑ Tactical Recovery of Aircraft and/or Personnel
- ❑ In-Extremis Hostage Recovery
- ❑ Clandestine Recovery Operations

❑ **Air Contingency Force (ACF).** Developed by both COMMARFOR PACIFIC and ATLANTIC, ACFs provide air-deployable forces to the Unified Commanders, with lead elements ready to deploy within 16 hours of notification. They are prepared to assume control of one or more reinforced battalions in support of current contingency plans or other contingency requirements. The ACFs provide great versatility in that they can be used as part of the fly-in echelon of a maritime prepositioning force, as reinforcement for an amphibious force, or as the lead element of a MEF. The ACF is prepared to perform the following missions:


- ❑ Stability operations (presence, humanitarian assistance, security, peacekeeping, counterinsurgency)
- ❑ Limited objective operations (non-combatant evacuation, amphibious raid, airfield seizure, counterterrorism)
- ❑ Conventional combat operations (amphibious, operations ashore, reinforcement).

The ACF will be task organized to meet the mission, the threat, and airlift availability. The size of the force can range from a reinforced rifle company, plus a battalion headquarters element, to a regimental size force, consisting of a regimental headquarters, two infantry battalions, a two-battery artillery battalion, a two-platoon reconnaissance company, a two-platoon engineer company, and an appropriate combat service support element.

❑ **Norway Prepositioning Program.** Similar in concept to the MPF, but land-based, this program currently stores supplies and combat equipment at secure locations in Norway for an airlifted force. Forward positioning of equipment saves both reaction time and tremendous additional airlift assets.

❑ **Marine Corps Security Forces (MCSF).** About 3,400 Marines protect key naval installations and facilities worldwide. Although not assigned to combatant commands, they are part of the operating forces of the Marine Corps, and contribute to our global combat power. These security forces include Marine Barracks and Marine Security Force Companies in CONUS and abroad, as well as Marine Detachments afloat.

The MCSF battalion contains a Fleet Anti-terrorism Security Team (FAST) company. FAST Marines deploy to reinforce high threat locations, provide security for nuclear fueling operations, and respond to other crises and contingencies as directed. Although not assigned to Unified Commanders, FAST units are available through naval service channels and have provided security worldwide.

 **Marine Security Guard Battalion.** The Marine Corps also provides forces to the Department of State for embassy security. Organized into the Marine Security Guard Battalion, these Marines are currently assigned to 121 diplomatic posts in 115 different countries throughout the world.

Reserves

In addition to active forces, force expansion is made possible by the activation of the Marine Corps Reserve, which, like the active forces, consists of a combined arms force with balanced ground, aviation, and combat service support units. Organized under the Commander, Marine Forces Reserve (COMMARFORRES), units of this command are located at 191 training centers in 46 states, Puerto Rico, and the District of Columbia.

Over the past several years, the Marine Corps Reserve has been closely integrated with the active component in our total force concept. The Reserves provide individuals and specific units to augment and reinforce active capabilities.

Supporting Establishment

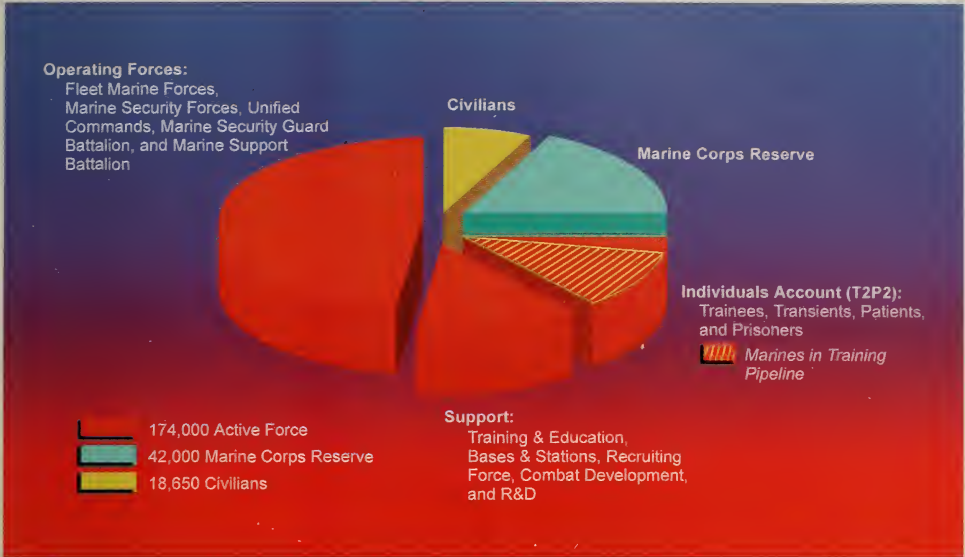
The Supporting Establishment – 30,000 Marines – staff our 16 major bases, training activities, formal schools, the Marine Corps Recruiting Command, the Marine Corps Combat Development Command, the Marine Corps Systems Command, and Headquarters, U.S. Marine Corps. The Supporting Establishment's contributions are vital to the overall combat readiness of the Marine Corps.

Marine Corps Total Force

Figure A-3 depicts the Marine Corps Total Force. There is a direct relationship between the size of the Marine Corps and the contribution made to our national defense. Large scale deployments, operations, and training exercises with allies are part of our training and presence requirements in peacetime. About 23 percent of our operating forces are forward-deployed during peacetime, which predicates a high deployment

tempo and a corresponding CONUS rotation base. As the U.S. retains a desire to maintain stability in areas where we have significant interests, the requirement for forward-deployed forces will continue.

FIGURE A-3: MARINE CORPS TOTAL FORCE (FY97 Authorizations)



Appendix B

Abbreviations and Acronyms

This appendix provides a list of abbreviations and acronyms which are commonly used in Marine Corps correspondence, publications, and daily dialog. This Appendix is provided for reference purposes. Not all listed acronyms are included in this publication.

AAAV	Advanced Amphibious Assault Vehicle
AAV	Assault Amphibious Vehicle
AAWS-M	Advanced Antitank Weapon System-Medium
ACE	Aviation Combat Element
ACF	Air Contingency Force
ACP	Aviation Continuation Pay
ACS	Advance Countermine System
ACTD	Advance Concept Technology Demonstration
ADCP	Air Defense Communications Platform
ADFC	Advanced Digital Fire Control System
ADS	Advanced Distributed Simulation
AE	Assault Echelon
AFATDS	Advanced Field Artillery Tactical Data System
AFOE	Assault Follow-On Echelon
AMC	Air Mobility Command
ANGLICO	Air Naval Gunfire Liaison Company
AO	Acquisition Objective
AOA	Analysis of Alternatives
AOR	Area of Responsibility
APN	Aircraft Procurement, Navy
APOBS	Antipersonnel Obstacle Breaching System
ARDEC	Army Research, Development & Engineering Ctr
ARG	Amphibious Ready Group
ARPA	Advanced Research Projects Agency
ATACC	Advanced Tactical Air Command Central
ATARS	Advanced Tactical Aerial Reconnaissance System
ATF	Amphibious Task Force
ATLASS	Asset Tracking Logistics & Supply System
ATO	Air Tasking Order
BA	Budget Activity/Authority
BMAR	Backlog of Maintenance & Repair
BRAC	Base Realignment and Closure
BUR	Bottom-Up Review

C2	Command & Control
C3I	Command, Control, Communications & Intelligence
C4I	Command, Control, Communications, Computers & Intelligence
CAC2S	Common Aviation Command and Control System
CAM	Chemical Agent Monitor
CATF	Commander Amphibious Task Force
CAX	Combined Arms Exercise
CBIRF	Chemical/Biological Incident Response Force
CBRS	Concept Based Requirements System
CBV	Combat Breacher Vehicle
CD	Counterdrug
CDS	Combat Development System
CE	Command Element
CECM	Communication Electronic Countermeasures
CENTCOM	Central Command
CG	Commanding General
CINC	Commander-in-Chief
CJTF	Commander Joint Task Force
CMC	Commandant of the Marine Corps
CMV	Combat Mobility Vehicle
CNA	Center for Naval Analyses
COE	Common Operating Environment
COE	Concept of Employment
COMINT	Communications Intelligence
COMSEC	Communications Security
CONUS	Continental United States
CORM	Commission on Roles & Missions of the Armed Forces
COTS	Commercial off-the-Shelf
CPG	Commandant's Planning Guidance
CQB	Close Quarters Battle
CR	Combat Requirement
CRDEC	Chemical Research, Development & Engineering Center
CRS	Canteen Refilling System
CSAR	Combat Search & Rescue
CSS	Combat Service Support
CSSE	Combat Service Support Element
CTAPS	Contingency Theater Automated Planning System
CTT	Commanders Tactical Terminal
CV	Aircraft Carrier

CVAT	Combat Vehicle Appended Trainer
CVBG	Carrier Battle Group
CWL	Commandant's Warfighting Laboratory
DAB	Defense Acquisition Board
DACT	Data Automated Communications Terminal
DAMA	Demand Assigned Multiple Access
DASC	Direct Air Support Central
DAWMS	Deep Attack Weapons Mix Study
DBOF	Defense Business Operations Fund
DEPTempo	Deployment Tempo
DF	Direction Finding
DFT	Deployments for Training
DIA	Defense Intelligence Agency
DII	Defense Information Infrastructure
DIS	Distributed Interactive Simulation
DISA	Defense Information Systems Agency
DMA	Defense Mapping Agency
DMRD	Defense Management Review Decision
DMSO	Defense Modeling & Simulation Office
DOA	Days of Ammunition
DoD	Department of Defense
DON	Department of the Navy
DOS	Days of Supply
DPG	Defense Planning Guidance
DPP	Defense Program Projection
DPRB	Defense Planning & Resources Board
DSCS	Defense Satellite Communications System
DSN	Defense Switched Network
DT	Developmental Test
DTC	Digital Technical Control
EAF	Expeditionary Airfield
EB	Enlistment Bonus
ECCM	Electronic Counter-Countermeasures
ECM	Electronic Countermeasures
EDM	Engineering Development Model
EHF	Extremely High Frequency
ELINT	Electronics Intelligence
EMD	Engineering & Manufacturing Development
E-MAIL	Electronic Mail
EOB	Electronic Order of Battle
ERGM	Extended Range Guided Munitions

ESP	Extended Service Program
ESS	Electronics Intelligence (ELINT) Support System
ETSS	Extended Training Service Specialist
EW	Electronic Warfare
FAC	Forward Air Controller
FARP	Forward Arming & Refueling Point
FAST	Fleet Anti-terrorism Security Team
FCIP	Foreign Counterintelligence Program
FDC	Fire Direction Center
FDS	Field Development System
FH	Frequency Hopping
FHMC	Family Housing Marine Corps
FIE	Fly-in Echelon
FLIR	Forward Looking Infrared
FLPP	Foreign Language Proficiency Pay
FM	Frequency Modulation
FMF	Fleet Marine Force
FOC	Full Operational Capability
FOF	Floating Offshore Facility
FPLIF	Field Pack Large with Internal Frame
FSC2S	Fire Support Command & Control System
FSCC	Fire Support Coordination Center
FSED	Full Scale Engineering Development
FSSG	Force Service Support Group
FTE	Full-Time Equivalent
FTS	Full-Time Support
FY	Fiscal Year
FYDP	Future Year Defense Plan
FYEP	Five Year Experimentation Plan
GCCS	Global Command & Control System
GCE	Ground Combat Element
GDIP	General Defense Intelligence Program
GMF	Ground Mobile Forces
GOTS	Government off-the-Shelf
GPS	Global Positioning System
HARM	High Speed Antiradiation Missile
HAW	Heavy Antiarmor Weapon
HF	High Frequency
HMD	High Mobility Downsize
HMMWV	High Mobility, Multipurpose Wheeled Vehicle

HQMC	Headquarters, U.S. Marine Corps
HUMINT	Human Intelligence
I2	Image Intensification
IAC	Intelligence Analysis Center
IAS	Intelligence Analysis System
ICAD	Individual Chemical Agent Detector
ICCE	Individual Combat Clothing & Equipment
IDASC	Improved Direct Air Support Central
IMINT	Imagery Intelligence
INTEL	Intelligence
IOC	Initial Operational Capability
IOT&E	Initial Operational Test & Evaluation
IPCOT	In-Place Continuation of Overseas Tour
IR	Infrared
IR3B	Integrated Resources & Requirements Review Board
IRR	Individual Ready Reserve
ISMT	Indoor Simulated Marksmanship Trainer
ISSA	Interservice Support Agreement
IST	Infantry Squad Trainer
JCS	Joint Chiefs of Staff
JFACC	Joint Force Air Component Commander
JIC	Joint Intelligence Center
JM	JTIDS Module
JMA/SA	Joint Mission Area/Support Area
JMASS	Joint Modeling & Simulation System
JMCIS	Joint Maritime Command Information System
JOPEs	Joint Operation Planning & Execution System
JOTS	Joint Operational Tactical System
JROC	Joint Requirements Oversight Council
JSCP	Joint Strategic Capabilities Plan
JSIMS	Joint Simulation System
JSIPS	Joint Service Imagery Processing System
JSTARS	Joint Surveillance Target Attack Radar System
JTF	Joint Task Force
JTF HQ	Joint Task Force Headquarters
JTIDS	Joint Tactical Information Distribution System
JWCA	Joint Warfighting Capability Assessment
JWFC	Joint Warfighting Center
JWID	Joint Warrior Interoperability Demonstrations
LAAD	Low Altitude Air Defense

LAAM	Light Antiaircraft Missile
LAI	Light Armored Infantry
LAN	Local Area Network
LAW	Lightweight Antiarmor Weapon
LAV	Light Armored Vehicle
LAV-AD	Light Armored Vehicle-Air Defense
LCAC	Landing Craft Air Cushion
LEWDD	Lightweight Early Warning Detection Device
LHA	Amphibious Assault Ship - General Purpose
LHD	Amphibious Assault Ship - Multipurpose
LIC	Low Intensity Conflict
LLDR	Lightweight Laser Designator Rangefinder
LLI	Long Lead Item
LMCC	Logistics Movement Control Center
LMS	Lightweight Multipurpose Shelter
LNBCRS	Light Nuclear, Biological, & Chemical Reconnaissance System
LOE	Limited Objective Experiment
LPD	Amphibious Transport Dock (Ship)
LPH	Amphibious Assault Ship - Helicopter
LP/OP	Listening Post/Observation Post
LRC	Lesser Regional Contingency
LRIP	Low Rate Initial Production
LTVR	Light Tactical Vehicle Remanufacture
LUT	Limited User Test
LVS	Logistics Vehicle System
LW155	Lightweight 155mm Howitzer

M&S	Modeling & Simulation
MAA	Mission Area Analysis
MACCS	Marine Air Command & Control System
MACS	Magnetic Countermine System
MAG	Marine Aircraft Group
MAGIS	Marine Air-Ground Intelligence System
MAGTF	Marine Air-Ground Task Force
MARCENT	Marine Forces Central Command
MARCORSYSCOM	Marine Corps Systems Command
MARDIV	Marine Division
MARFORLANT	Marine Forces Atlantic
MARFORPAC	Marine Forces Pacific
MARFORRES	Marine Forces Reserve
MASINT	Measurements & Signatures Intelligence
MAW	Marine Aircraft Wing

MAW	Medium Antiarmor Weapon
MAWTS-1	Marine Aviation Weapons & Tactics Squadron-One
Mbps	Megabits per second
MBST	Marine Battle Skills Training
MBT	Main Battle Tank
MCAGCC	Marine Corps Air-Ground Combat Center
MCARMS	Marine Corps Ammunition Requirements Management System
MCAS	Marine Corps Air Station
MCASS	Marine Common Application Support Software
MCB	Marine Corps Base
MCCDC	Marine Corps Combat Development Command
MCCPIP	Marine Corps Continuous Process Improvement Program
MCDN	Marine Corps Data Network
MCFSS	Marine Corps Fire Support System
MCHS	Marine Corps Common Hardware Suite
MCM	Mine Countermeasures
MCMP	Marine Corps Master Plan
MCMSO	Marine Corps Modeling & Simulation Management Office
MCMWTC	Marine Corps Mountain Warfare Training Center
MCNR	Military Construction, Navy Reserve
MCRC	Marine Corps Recruiting Command
MCSF	Marine Corps Security Forces
MCSSC2	Marine Combat Service Support Command & Control
MCTEEP	Marine Corps Training, Exercise Employment Plan
MCTSSA	Marine Corps Tactical System Support Activity
MEB	Marine Expeditionary Brigade
MEF	Marine Expeditionary Force
MEP	Marine Enhancement Program
MEU	Marine Expeditionary Unit
MEU(SOC)	Marine Expeditionary Unit (Special Operations Capable)
MEWSS	Mobile Electronic Warfare Support System
MHE	Material Handling Equipment
MHz	Megahertz
MIIDS	Military Integrated Intelligence Data System
MILCON	Military Construction, Navy
MILES	Multiple Integrated Laser Engagement System
MILSTAR	Military Strategic & Tactical Relay
MLA	Medium Lift Alternative

MLRS	Multiple Launch Rocket System
MNS	Mission Need Statement
MOA	Memorandum of Agreement
MOB	Mobile Offshore Base
MOOTW	Military Operations Other than War
MOS	Military Occupational Specialty
MOUT	Military Operations on Urbanized Terrain
MPF	Maritime Prepositioning Force
MPIM	Multi-Purpose Individual Munition
MPMC	Military Personnel, Marine Corps
MPS	Maritime Prepositioning Ship
MPSRON	Maritime Prepositioning Ship Squadron
MRC	Major Regional Contingency
MRS	Mobility Requirements Study
MSBL	MAGTF C4I Software Baseline
MSC	Major Subordinate Command
MSE	Major Subordinate Element
MTACCS	Marine Tactical Command & Control System
MTT	Mobile Training Team
MTVR	Medium Tactical Vehicle Remanufacturing
MTWS	MAGTF Tactical Warfare Simulation
NALMEB	Norway Air-Landed MEB
NATO	North Atlantic Treaty Organization
NBC	Nuclear, Biological & Chemical
NCA	National Command Authority
NCO	Noncommissioned Officer
NDP	National Defense Panel
NEF	Naval Expeditionary Force
NEO	Noncombatant Evacuation Operations
NESEA	Naval Electronics System Engineering Activity
NDI	Non-Developmental Item
NIPRNET	Nonsecure Internet Protocol Router Network
NITF	National Imagery Transmission Format
NM	Nautical Mile
NMCB	Navy Mobile Construction Battalion
NMS	National Military Strategy
NSE	Naval Support Equipment
NSF	Navy Stock Fund
NSFS	Naval Surface Fire Support
NTCS-A	Naval Tactical Command System Afloat
NVG	Night Vision Goggles

O&MMC	Operation & Maintenance, Marine Corps
O&MMCR	Operation & Maintenance, Marine Corps Reserve
OMFTS	Operational Maneuver from the Sea
ONR	Office of Naval Research
OOTW	Operations Other than War
OPEVAL	Operational Evaluation
OPNAV	Chief of Naval Operations
OPP	Offload Preparation Party
OPTEMPO	Operational Tempo
ORD	Operational Requirements Document
OT&E	Operational Test and Evaluation
OTEIP	Overseas Tour Extension Incentive Program
OTH	Over the Horizon
PAA	Primary Aircraft Authorization
PANMC	Procurement of Ammunition, Navy & Marine Corps
PCS	Permanent Change of Station
PDRR	Program Definition & Risk Reduction
PERSTEMPO	Personnel Tempo
PGTS	Precision Gunnery Training System
PIP	Product Improvement Program
PLRS	Position Location Reporting System
PMC	Procurement, Marine Corps
PME	Professional Military Education
POM	Program Objective Memorandum
PPBS	Planning, Programming & Budgeting System
PRG	Program Review Group
PSD	Propulsion System Demonstrator
PWRMS	Prepositioned War Reserve Material Stocks
QDR	Quadrennial Defense Review
QOL	Quality of Life
R3B	Resources & Requirements Review Board
R&D	Research and Development
RAC	Riverine Assault Craft
RBE	Remain Behind Equipment
RDT&EN	Research, Development, Test & Evaluation, Navy
RETS	Remote Engagement Target System
ROC	Required Operational Capability
RO/RO	Roll-On/Roll-Off
ROWPU	Reverse Osmosis Water Purification Unit
RPMC	Reserve Personnel, Marine Corps

RREP	Radio Reconnaissance Equipment Program
RRR	Residual Reserve Requirement
SAAWF	Sector Anti-Air Warfare Coordination Facility
SACC	Supporting Arms Coordination Center
SANG	Saudi Arabia National Guard
SAR	Search & Rescue
SATCOM	Satellite Communications
SCN	Shipbuilding & Conversion, Navy
SEAD	Suppression of Enemy Air Defense
SECDEF	Secretary of Defense
SECNAV	Secretary of the Navy
SEMP	Supporting Establishment Master Plan
SESAMS	Special Effects Small Arms Marking System
SHF	Super High Frequency
SIDS	Secondary Imagery Dissemination System
SIE	Systems Integration Environment
SIGINT	Signals Intelligence
SINCGARS	Single Channel Ground & Airborne Radio System
SIPRNET	Secret Internet Protocol Router Network
SLOC	Sea Lines of Communication
SMART-T	Secure Mobile Anti-Jam Reliable Tactical Terminal
SMAW	Shoulder-Launched Multipurpose Assault Weapon
SMCR	Selected Marine Corps Reserve
SNCO	Staff Noncommissioned Officer
SOC	Special Operations Capable
SOI	School of Infantry
SPMAGTF	Special Purpose Marine Air-Ground Task Force
SPMAGTF(X)	Special Purpose MAGTF (Experimental)
SRAW	Short Range Assault Weapon
SRB	Selective Reenlistment Bonus
SRI	Surveillance, Reconnaissance & Intelligence
SRIG	SRI Group
SRR	Strategic & Residential Requirement
STAR-T	SHF Tri-Band Advanced Range Extension Terminal
STOVL	Short Take-Off Vertical Landing
SUBD	Small Unit Biological Detector
SWA	Southwest Asia
SWMCM	Shallow Water Mine Countermeasures
TACAIR	Tactical Air
TACC	Tactical Air Command Center
TACO	Tactical Communications

TAOC	Tactical Air Operations Center
TAOM	Tactical Air Operations Module
TAH	Hospital Ship
TAVB	Aviation Logistics Support Ship
TBD	To Be Determined
TCAC	Technical Control & Analysis Center
TCC	Tactical Communications Center
TCIM	Tactical Communications Interface Module
TCO	Tactical Combat Operations
TDN	Tactical Data Network
TEG	Tactical Exploitation Group
TEMP	Test and Evaluation Master Plan
TERPES	Tactical Electronic Reconnaissance Processing & Evaluation System
TFDSS	Total Force Decision Support System
TLAM	Tomahawk Land Attack Missile
T/M/S	Type/Model/Series
TOA	Total Obligational Authority
TOW	Tube-Launched, Optically-Tracked, Wire-Guided Missile
TPCS	Team Portable Communications Intelligence System
TQL	Total Quality Leadership
TRAP	Tactical Recovery of Aircraft and Personnel
TRE	Tactical Receive Equipment
TRHS	Tray Ration Heating System
TRSS	Tactical Remote Sensor System
TWGSS	Tank Weapon Gunnery Simulator System
TWSEAS	Tactical Warfare Simulation, Evaluation & Analysis System
UAV	Unmanned Aerial Vehicle
UHF	Ultra High Frequency
ULCS	Unit Level Circuit Switch
UNMIH	United Nations Mission in Haiti
UNOSOM	United Nations Operations Somalia
UNPROFOR	United Nations Protection Force
VHF	Very High Frequency
V/STOL	Vertical/Short Take-Off & Landing
WAN	Wide Area Network
WHNS	Wartime Host Nation Support
WMD	Weapons of Mass Destruction

WPN	Weapons Procurement, Navy
WWMCCS	World-Wide Military Command & Control

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